1. Incident Name	2. Operational Period to be covered by IAP (Date/Time)	CG IAP
Cotton Patch Bayou-07	From: 0800 9/12/07 To: 0800 9/13/07	COVER SHEET
3. Approved by Incident Commander(s):		
ORG NAME		
USCG Captain Dient if OSCR MST8	Omrating State of the State of	
EPA Chos Rutil		
ICEO Matt Allen Motalica	Jan	
RP Robert Stewart	de gli	1
SMT Kelly Wilson Killy (	Var	
	NT ACTION PLAN elow are included in this Incident Action Plan	
ICS 202-CG (Response Objectives)		
ICS 203-CG (Organization List) - OR - ICS 20	17-CG (Organization Chart)	
ICS 204-CGs (Assignment Lists) One Copy each of any ICS 204-CG attachmen	ots:	
☐ ICS 205-CG (Communications Plan)	· · · · · · · ·	- x ·
ICS 206-CG (Medical Plan)		
ICS 208-CG (Site Safety Plan) or Note SSP Lo	ncation	
Map/Chart     Map/Cha		• /
Weather forecast / Tides/Currents		
Other Attachments		
Process Vialo, Treatment Plan		
Resources at Risk		
Storage Plan		
Disaster Scenarios and Response		
Press Release		
Emergency Situation Memo		
Initial Fertilizer To incitation Plan		
Cogon Patch Bayou Release Updales		
Water Levels		,
4. Prepared by	Date/Time	1.00
Tim Langford	9/11/67 1315	

COURT OCYER SHEET

(∂ev \$/i)41

2. Operational Period (Date/Time) 1. Incident Name INCIDENT OBJECTIVES Cotton Patch Bayou Release '07 ICS 202-CG From: 0800 9-12-07 To: 0800 9-13-07 3. Objective(s)

- 1. Safety of Personnel
- 2. Moniter storage capacity
- 3. Prepare facility waste water treatment plant for raw gypsum water.
- 4. Provide water balance sheets to UC at each meeting.
- 6. Complete Disaster Scenarios and Response Plan
- 7. Develop and initate environmetal task force assesmessment team. (a. On water (b . Land
- 8. Complete permanent repair to wall breach.
- 9. Develop a Material Management Plan to remove 35,000,000 gallons of liquids from the South Stack.
- 10. Moniter and report the stability of all the stacks and retaining walls.

### 4. Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions)

ATV type vehicle is now stationed by "Rally Point 3" as indicated on the Site Safety Plan map for staff mobilization to the safety rally point should it become necessary to move personnel to higher ground...

Wildlife - If impacted wildlife is observed do not attempt to retrieve etc. Report sightings to PSC-Niell Irvin @ 713-598-9025.

### Material Management Plan:

Identify, evaluate & procure offsite disposal options for raw or treated gypsum water.

Identify, evaluate & procure transportation for raw or treated gypsum water.

Develop a Reuse Plan.

### Disaster Scenarios and Response Plan:

Determine the benchmarks required for the initiation of the DSRP.

Approved Site Safety Plan Located at: Posted in UC Room and In field with workers.

5. Prepared by: (Planning Section Chief)

Date/Time 9-11-07 / 1315

Tim Langford

# **UNIFIED COMMAND**

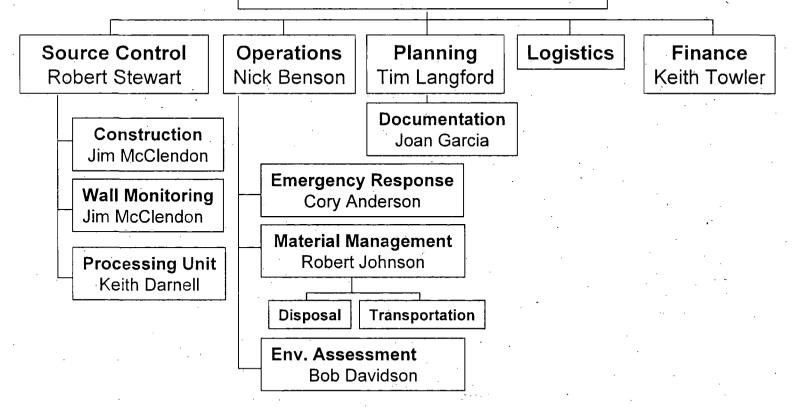
FOSC- EPA-Chris Ruhl

**USCG-Capt Diehl** 

**SOSC-** TCEQ-Walter Rodriguez

RP/QI- Agrifos

SMT/IC- O'Brien's-Kelly Wilson



1. Incident Name	•	2. Operati	onal Perio	od (Date/	Time)	Assignment List
Cotton Patch Bayou Release	e 07	From: 08	, , 00 9-12-0	7 To:	0800 9-13-07	ICS 204-CG
3. Branch Construction Group		4. Division/Group/ Constructio	Staging		1	e de la companya de l
5. Operations Personnel Source Control Section Chie	Name f: Robert Stew		ation		Contact # (s) 713-248-5189	
Branch Director:		7,9,,,	0.0			
Division/Group Supervisor/STAM:	Jim McClend	don Agri	fos		713-823-3193	<del></del>
6. Resources Assigned				ndicatos	204a attachment with ad	ditional instructions L
Strike Team/Task Force/Resource		1		# of	204a attachment with ac	ditional instructions
Identifier	Leader	Contact Info	.#	Persons	Reporting Info/	Notes/Remarks . , ▼
Back Hoe with Jackhammer	3JRyan					
Silt Dams	3JRyan					
Rebar	3JRyan.	·	-			
Personnel	Joe Reyes	713-875-4597.		7-9		·
Concrete Forms	3JRyan					
Dirt	3JRyan					
Concrete to pour	3JRyan				1	
				• .		
<u> </u>						
	`			•	-	
						لحا
				•		
7. Work Assignments 1. Crews must deconstruct fai 2. Crews must clear concrete	debris ng, should finish late location ete forms into place has granted us accitation	tonight or early Wedn	set up cra	ine.		12-07.
8. Special Instructions						•
Maintain safety and welfare of respo Minimize adverse impacts on enviro Report any injured or deceased wild	nment	, ,				
9. Communications (radio and/or	phone contact num	bers needed for this	assignme	ent)		
Name/Function	Radio: Fr	eq./System/Channel	F	Phone	Cell/Page	·
Nick Benson OSC	Agrifo	os Channel 1	281-	467-9808	<u> </u>	· <u>·</u> ··
Jim McClendon Agrifoss	_ <del>.</del>	<del></del> :	713-8	823-3193	· ·	
Joe Reyes Pres. Of 3JRY	<u>'AN</u>		713-8	875-45 <u>9</u> 7		<del></del>
Emergency Communications					·	
Medical	Evacuation			Other	<del></del>	<del></del>
10. Prepared by Tim Langford 09		Reviewed by (PSC) Tim Langford	9-11-07	z/ <b>Time</b> 7 1350.	12. Reviewed by (OSC	C) Date/Time

1. Incident Name		2. Operation	onal Period (Date/	Time)	Assignment List
Cotton Patch Bayou Release	9 07			Го: 0800 9-13-07	ICS 204-CG
3. Branch Wall Maintenance		4. Division/Group/S Wall Mainten			
5. Operations Personnel	Name	Affilia	ition	Contact # (s)	
Source Control Section Chie	f: Robert Stew	rart Agrifo	ne	713-248-518	39
Branch Director:		Agrin		170270310	
Division/Group Supervisor/STAM:		don Agr	ifos	713-823-319	<del></del>
6. Resources Assigned				204a attachment with ac	<del></del>
Strike Team/Task Force/Resource	,	T	# of		
Identifier	Leader	Contact Info.	Fersons	Reporting Info/	Notes/Remarks
Wall Maintenance Crew	Luke	281-642-6515	3-4		
Associated repair tools	Luke	281-642-6515		<del></del>	
Geotechnical Consultant	Robert J. Werner	407-855-3860	1		
		<del>  ´                                   </del>			
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				<u> </u>	
7. Work Assignments 1. Locate and identify additional see 2. Monitor and report leak rates to O existing and newly discovered se 3. Apply mitigation method to seeps 9-11-07 update: there have fiv 4. Prep and initiate repairs if applica 5. Geotechnical consultant will submit the stability.	perations Section C eps e mitigation plates in ble (see special instruct act a daily visual sur	nstalled and they will b ructions). vey of all stacks and re	etaining walls.	•	vents that may affect
8. Special Instructions					
Once temporary repair is be made	the Site Safety Off	ficer must be notified.	•		
Upon notification to the Site Safet	y Officer, he will det	ermine if the area is SA	AFE to work in.		
·					
		•			
0.0		have weeded for this	accienment)	<u> </u>	
9. Communications (radio and/or Name/Function		eq./System/Channel	Phone	Cell/Page	r
Nick Benson	Naulo. FI	сч. оузын понаты	281-467-9808	Ociii i age	·
Jim McClendon			713-823-3193	·	<del></del> "
Emergency Communications			•		•
Medical Henry Kana 832-647-	8357 Evacuation	on	. Other	r 911 – Emergency Servi	ces
10. Prepared by		Reviewed by (PSC)	Date/Time	12. Reviewed by (OSC	
	11-07 1334	Tim Langford	9-11-07 1334		·

1. Incident Name	2. Ope	rational Period (I	Date/Time)		ASSIGNMEN	T LIST AT	TACHMENT
Cotton Patch Bayou Release '07	From: 0800 09-12-07 To: 0800 09-13-07			)-13-07		7 1	CS 204a-CG
3. Branch Process Unit		4. Division/Gro Process Unit				•	
5. Strike Team/Task Force/Resource (Identifier)	6. Lea Keith	<b>der</b> Damell		signment l s Fertilizer		11. 1	
8. Work Assignment Special Instructions, Special Considerations, Special Site Specific Safety C			eded for As	signment,	Special Enviror	mental	4. 1 1. 4
Develop a Material Reuse Plan.				-			
-Plan will include how material (2 pH fertilizer feedst	ock) will	be processed, and	d product pro	duced.			
-Include onsite storage capacity, transportation proc	edures, a	and possible desti	nation points		,		
Action to begin tomorrow:			*				the second
-Finish processing remaining run off water - complet	te					9.00	e gr
-Begin pipeline construction to dock - begun, should	be comp	olete by 9-12-07	•				, · · · · · ·
-Convert waste water plant to process 2 pH liquid fe gallons of feedstock daily) - ongoing.	rtilizer fe	edstock into a fert	ilizer product	(sytem will	be designed to p	process 1,0	000,000
-Complete license application for emergency approv	al - ongo	ing.	•	1			1 2 %
Future Plans:	-					12	
-Identify additional storage locations - ongoing.						12.7	. Le de la cil
-Develop a plan for onsite application - ongoing.		•	•			5	
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Approved Site Safety Plan Located at: ICP  9. Other Attachments (as needed)		·				• •	
·	Veather F	Forecast/Tides/C	urrents				
	Reviewo Langfor	ed by (PSC): d	Date/Tim 09-11-07 134		eviewed by (OS	C): :	Date/Time

1. Incident Name		2. Operations	al Period (Date/1	ime)	Assignment L	ist
Cotton Patch Bayou Releas	e 07	From: 0800		0800 09-13-07	ICS 204-0	CG'
3. Branch Emergency Response		4. Division/Group/Sta Environmental	iging Assessment Gr	oup	•	÷
5. Operations Personnel	Name	Affiliatio	on .	Contact # (s)		
Operations Section Chief:	Nick Benson	OOPS		281-467-9808		
Branch Director:	Carl Andreas	HCEC		201 042 0447	<del> </del>	٠.
Division/Group Supervisor/STAM:	Cory Anderson	USES	4V# :!:	281-642-9117		
6. Resources Assigned Strike Team/Task Force/Resource	1	<u> </u>	# of	204a attachment with ac		S
Identifier	Leader	Contact Info. #	Persons	Reporting Info/	Notes/Remarks	<u> </u>
USES Personnel	Cory Anderson	281-642-9117	5			
Hydrated Lime	Bubba Bryan	713-703-9326	TBD	Based on calculation	of area	
Rubber Tire Loader	Bubba Bryan	713-703-9326	TBD			
Track Hoe	Bubba Bryan	713-703-9326	TBD			
	·					
					· .	
		1				
7. Work Assignments 1. Identify staging 2. Delivery of Equipment 3. Begin placement of neutral 4. Set up pH monitoring down						
8. Special Instructions			· <del>········</del>			
Refer to Site Safety Plan     Follow direction of on-site	supervisor	· · · · · · · · · · · · · · · · · · ·				
9. Communications (radio and/or Name/Function		bers needed for this as	signment) Phone	Cell/Page	·	
Nick Benson OSC	· · ·			<del>-</del>	·	
Cory Anderson USES				<del></del>		-
Emergency Communications Medical	Evacuatio	n	Other			<u>-</u>
10. Prepared by Tim Langford 09		Reviewed by (PSC) Firm Langford (	<b>Date/Time</b> 09-11-07 1820	12. Reviewed by (OSC	Date/Tim	ie

1. Incident Name	2. Ope	rational Perio	d (Date/T	ime)	ASSIGN	IMENT LIST A	TTACHMENT
Cotton Patch Bayou Release '07		0800 09-12-			7		ICS 204a-CG
3. Branch Material Management		4. Division/ Disposal	Group		•	:	, .
5. Strike Team/Task Force/Resource (Identifier)	6. Lea Roger	der Johnson		7. Assignm Agrifos Ferti	ent Location lizer facility		
8. Work Assignment Special Instructions, Special Considerations, Special Site Specific Safety C			s Needed	for Assignm	nent, Special Er	vironmental	
Locate disposal facilities that are able to process gy	psum wa	ter	<del></del>				
Identify the parameters required for the gypsum wat	er to be a	accepted by th	e disposa	l facilities.			
9-10-07 Report from working group:				•		-	
Gulf Coast Disposal- Discussion Sunday, September 9, with Gulf Coast D at their facility. Acknowledged their facility was a bid quantity they could take has not yet been made, but about permit violations and were going to look at the	ological tr ranges r	reatment plant un from 500,0	and that a	any fluorides o begin with.	would be passed Gulf Coast Was	d through. The ste Disposal wa	decision of as adament
Shipping parameters were in this order: trucks, barg	ges, and	lastly pipelines	<b>3</b> .				September 1
EPA , TCEQ and CG were all present and were all	told what	permits would	d be violat	ed.			
Discussion Monday, September 10, via email, Gulf of delivery to: pipelines, barges and then trucks, in that		este sent new	and better	acceptance	parameters and	changed the	method of
Agrifos took parameters and are currently analyzing because they have two pipelines that go directly to 0 pretty well utilized, but take a look at it. This afterno possible connection point for our treated processed uses before a definate commitment was given. Agriconnections.  Texas Molecular Services-	Gulf Coas on, we m water. K fos is tryi	st. One pipelir let with Kinder inder Morgan lng to set up c	ne is lease Morgan, was recep onversation	d to Celenas since they als otive to giving on with Pasad	e, and Air Produ so distirbute thei I us help but war Iena Refining to	icts said the lin r waste to Gulf nted to verify th complete the p	es were Coast, as a neir needs and nipeline
Spoke to Debra Payne 9-10-07. Deer Park facility ca determine how much material can be taken and and Projected submittal, 9-11-07.							
Clean Harbors-			•				
9-11-07 Report from working group: Meting with Pasadena Refining at 1500 today to disc regarding useage of the pipeline as a follow up of th			aste dispo	sal line. Our	several convers	ations with Kir	nder Morgan
ACTION: Develop a profile document for any mater	ial that w	ill be disposed	f of.				
						•	,
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•							
Approved Site Safety Plan Located at: ICP	-						
		Forecast/Tide	s/Current	s			
	Reviewe Langfor	ed by (PSC): d		te/Time -07 1345	12. Reviewed b	y (OSC):	Date/Time

1. Incident Name	2. Opei	rational Perio	od (Date/Time)	)	ASSIGNMENT LI	ST ATTACHMENT
Cotton Patch Bayou Release '07	From:	0800 09-12-	07 To: 0800	09-13-07		ICS 204a-CG
3. Branch Material Management		4. Division/ Transporta	Group	_	•	
5. Strike Team/Task Force/Resource (Identifier)	6. Lea Steve	der Pierce		Assignment I rifos Fertilizer		
8. Work Assignment Special Instructions, Special Considerations, Special Site Specific Safety C			s Needed for	Assignment,	Special Environme	ntal
Identify, evaluate and procure transportation for gyp	sum wate	er to a disposa	al facility.		•	14
-Determine best available transportation method for	the giver	disposal loca	ation.	•	•	
-Consider tank barges, tanker, and/or pipeline.				,	Ĺ	*. ·
-Determine material specifications required by any v	essels us	sed.			•	
Report from working group:					• .	
General Marine Leasing contacted to source available	ole barges	<b>S</b> .		••		: :
Lake Mary Marine contacted. Located 3 local barges Checking MSDS to insure no other conflicts exist.	s (30,000	bbls total), ar	nd 2-in New Or	rleans (20,000	) bbls total). pH must	be 4 or higher.
Seacor and Van Brothers contacted. Waiting for res	ponse.				•	
-Continue chartering barges to transport product to one New Orleans).	destinatio	ns (3,000,000	gallon receive	er located in F	louston, additional 1,	000,000 located in
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Account Site Sefety Plant Learned At 100				·		
Approved Site Safety Plan Located at: ICP 9. Other Attachments (as needed)	· · ·		<del>.</del>			
· ·	Veather F	orecast/Tide	s/Currents			
10. Prepared by: Date/Time 11.	Reviewe	d by (PSC):	Date/Ti		teviewed by (OSC):	
	Langford		09-11-07 1			

1. Incident Name		2. Operational Pe	eriod (Date/T	ime)	Assignment	List
Cotton Patch Bayou Release	e 07	From: 0800 9-12	0800 09-13 <u>-</u> 07	ICS 204	1-CG	
Branch     Environmental Assessment	. •	4. Division/Group/Staging Environmental Ass	•			
5. Operations Personnel	Name	Affiliation		Contact # (s)		
Operations Section Chief: _ Branch Director:	Nick Benson	OOPS		281-467-9808		
Division/Group Supervisor/STAM:	Bob Davidson	Benchmark		281-733-7 <u>8</u> 50		
6. Resources Assigned			X" indicates 2	204a attachment with ac	Iditional instruction	ons
Strike Team/Task Force/Resource Identifier	Leader	Contact Info. #	# of Persons	Reporting Info/	Notes/Remarks	<del>+</del>
EPA Personnel	Chantelle Billiot	832-347-3650	2		•	
USCG Personnel	MST Mijarez	915-329-7092	TBD		•	
Agrifos Personnel	Roger Johnson	281-733-7850	TBD			
TCEQ Personnel	Matt Allen	713-540-9496	TBD			
Benchmark Environment Group	Bob Davidson	281-934-3403 / 703-7676	1		10 - 1	
US Fish and Wildlife			TBD			
		,			· · · · · · · · · · · · · · · · · · ·	
7. Work Assignments 1. Completing environmental	site assessment				,	
·					•	
1. Please refer and follow site safety 2. Utilize "Buddy System" when wall 3. Be aware of environmental condit 4. Report any injured or deceased w Update 9-11-07 — talked with Wa	king within site area tions (Heat, Rain, Wil vildlife to Agrifos supe	rvisor immediately	2-07, or until	we discharge again, cul	back monitoring	}
9. Communications (radio and/or Name/Function Henry Kana Sile Safety Officer	Radio: Fre	eq./System/Channel s Channel 1 83:	nment) Phone 2-647-8357	Cell/Page		
Emergency Communications  Medical	Evacuatio	<del></del>	Other_			
10. Prepared by Tim Langford 09	,1	3 . ,	0-07 1350	12. Reviewed by (OSC	C) Date/Ti	ime

1. Incident Name Cotton Patch Bayou Re		Operational Period (Date / Time) rom: 0800 9-12-07	COMMUNICATIONS LISTICS 205A-CO
3. Basic Local Commun	ications Information	1	
Assignment	Name	Method(s) of contact (radio frequen	ncý, phone, pager, cell #(s), etc.)
USCG	David Orozco	915-383-6837	
USCG	Gilbert Mijarez	915-329-7092	
Agirfos	Robert Stewart	713-248-5189	•
· · · · · · · · · · · · · · · · · · ·	Dick Nettles	281-382-4256	<del></del>
Agrifos	Praveen Jain	281-543-8188	<del></del>
	Margaret Smith	423-653-0358	
Agrifos (Pipe / Const.)	Jim McClendon	713-823-3193	
Agrifos (Storage / Env)	Roger Johnson	281-733-7850	
Agrifos	Rose Broome	281-923-2070	
	Tom Edwards	281-610-3403	
1. A	Casey Smith	601-807-7665	
O'Brien's (UC)	Kelly Wilson	713-503-6389	· · · · · · · · · · · · · · · · · · ·
USCG (Tech Spec))	Virginia Kammer	251-776-2793	
NOAA (SSC)	Charlie Henry	206-849-9928	
· : : .	Mike Davis	713-409-2517	
EPA (UC)	Chris Ruhl	214-789-9587	
USCG	Matt Tilimon	832-256-3261	
USCG (Tech Spec)	Chet Davis	251-776-2792	<u> </u>
O'Brien's (OPS)	Nick Benson	281-467-9808	
K&T Safety (SSO)	Henry Kana	832-647-8357	
Agrifos	Steve Pierce	713-705-7043	
Media	Chuck Wolf	713-304-2912	· · · · · · · · · · · · · · · · · · ·
Agrifos (Treatment)	Keith Darnell	281-923-2064	
O'Brien's (Plan)	Tim Langford	281-330-9930	
HCPHES .	Al Rushanan	713-740-8757	
Agrifos (PIO)	Melanie Miller	713-594-9165	
TCEQ (UC)	Walter Rodriquez		
Media	Bob Gresser	713-562-3272	
USCG (Media)	LT Mark Molavi	832-256-2568	·
Benchmark (Env)	Bob Davidson	281-834-3403 / 703-7676	
EPA (START)	Derrick Cobb	832-347-4180	
EPA (START)	Chantelle Billiot	832-347-3650	
ExxonMobil	Buddy Hand	281-654-8457	
TCEO (SOSC)	Matt Allen	713-540-1935	······································

USCG (FOSC)	Capt. Diehl	713-671-5100
USES Cory Anderson		281-642-9117
4. Prepared by: (Co Tim Langford	mmunications Unit)	<b>Date / Time</b> 9-11-07 1355
COMMUNICATIONS LIST		ICS 205a-CG (Rev. 07/04)

SBI RESPOSSE PLAS	Inches Clause	Reliace O 9.7.65		3. Operational Period	4. Alta lineaus: Altach AlS Chemical: Zace Partit	= dreet styring	
r	nivatinagi Super Land Co	Entry Team:		Dacking Fesant	Diction Team	12.19 f 1911	
e a Chresian Dizentanni 6 Protection 6	do Comined Space [] Hoise History Falls [7] Smark by	Heat Stress A Cold St	Excusation [7] Hist	medical waste and/or need 3   6 m   1 6 m Sign	les [] Patigno [4] Other (spe	City) Test lab	
Tasks & Courts is	m. t Ventila finating	Rype) Hard Cleffi Hare (Caldy	(9) Jackst	s) Fluids & Constitute) Buricans	Prised Post Figh. Gastis Friday	Mak Offer Abylia (Mayor Payar)	
Despoising alash	Ye's	Say / YES / //				Mark Ses	
Marillan Gillandari anna							
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IF Appel	7.h. Hazarda		et intails	7.1. Exposure Routes	7.f.PPE //.	Aprount	Period
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8. insimmenty: 8 =	Scion 3.h. Charden Humela) Levela	5 m. H.d. Odia ,i ki judi. Threch. 36 Panj			Fire Resistance[ ]	Specific 6.1 Clusterly Building   Property   Property	
CGI [] CGI [] Kadiation []	Padwater	N.A. XIA	NA T	3.13	H.P20 N.A.	1.0 N.E.	,
Total HCs [] Colon-asinia [] Thermal [] Other []	Sedn Ash	N.A. N.A.	N.A	A No N.A	U,A. NA 2	3-25 K.A.	
			I		age 1 (rev 9/06): Par	ie of	

	noidenthame CFBR-07 AND-UNTO-Relative	1 1/2/19/20	and Period   4. Attachment	18: Attach MSDS for earli Chemics
Deconfacionica (EVENER) Lictimizat Diop ON [] der Banca Have Kamevai [K]		Bothe Exchange Onter Stat Removal Inter Stat Removal Sc.U.A/Mask Removal	SCHAAdask Rinse Inner Glove Removal Work Chothes Removal Hody Shower	Intervening Staps Specify:
	24, Locations of Hazarda, Security	Parimeter, Places of Refuge, Decembaninali	on Line, Esponulan Routes, ?	Assembly Point, Direction of Hort
[Abached, [] Orawn Below:	•		•	
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6 OIGH B	Bells [] #Bings []	Energency Providen and Practition Proceedings on SIACMS THE FENCE ATTIONS ATTIONS ATTIONS	Codumed July 1704/17 2 Second	en 135, ADR HONZ - RUDIUS R-CONTROLES
i 2, a <u>Communications</u> : Radio <b>K</b> B-Phone <b>(1)</b> Ottos [ ]	12.b. Command & Fri	12 ं मधिन सिंह	13 in Falli	lin ferr
11.4. Shu Secoulty:	13. THE PROCESSION OF THE SECOND		13.c. E	quipment
Poisonnel Assignest				
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Personnell Assigned	FORL BUILDING	NICY ASSIANNEE CAPABIL	178	REJOHNSON TRAILER
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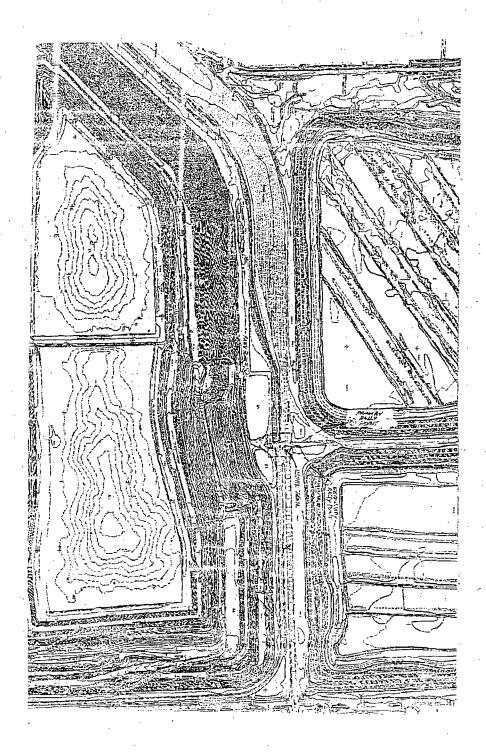
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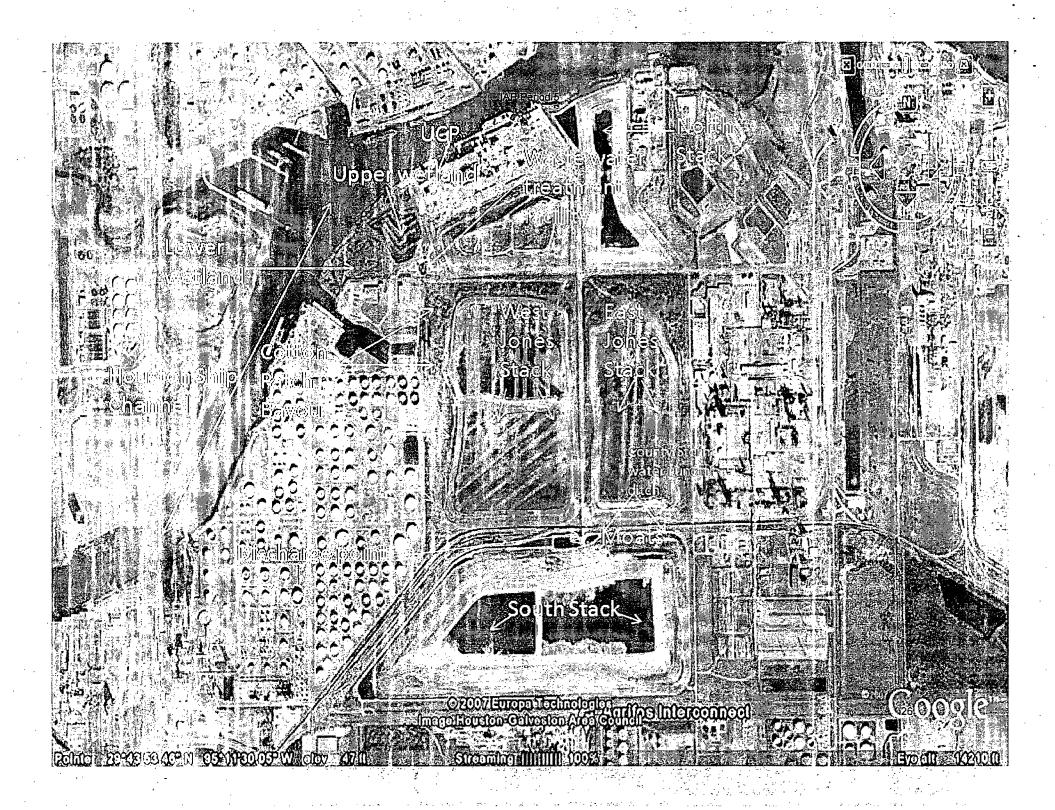
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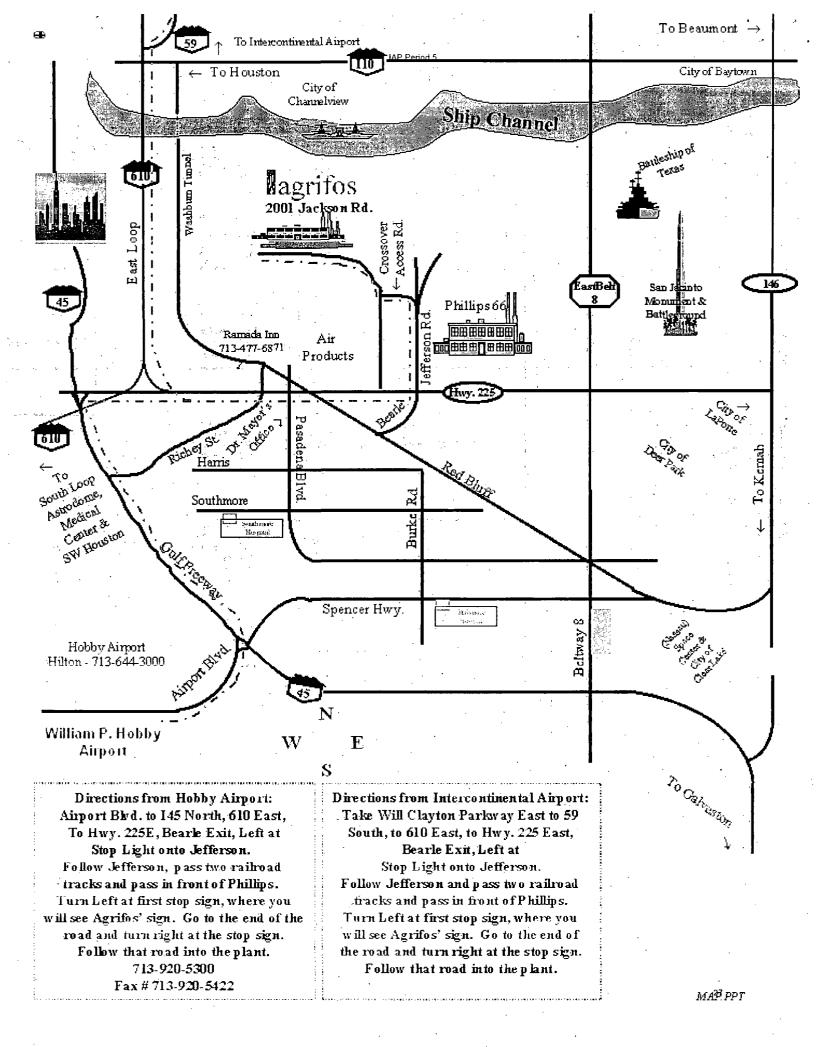
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9-12-07 Operations Briefing Operations Briefing Operations Briefing Operations Operation	3. Meeting S	Schedule (Commo	only-held meetings are incl	uded)	· - ·
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Command Objectives objectives for the next operational period.  Command & Command & General Staff Meeting  Command & General Staff Including incident objectives and priorities  Tactics Meeting  Develop/Review primary and alternate Strategies to meet Incident Objectives for the next Operational Period.  Command & General Staff Including Incident objectives and priorities  Develop/Review primary and alternate Strategies to meet Incident Objectives for the next Operational Period.  Planning Meeting  Review status and finalize strategies to meet Incident Objectives for the next Operational Period.  Period.  Review status and finalize strategies to meet Incident Objectives for the next Operational Period.  Determined by the IC/UC  UC-MTG Room 102  UC-MTG Room 103  UC-MTG Room 103  UC-MTG Room 103  UC-MTG Room 103					
Command & General Staff Meeting	0800	Command Objectives	objectives for the next	Unified Command members	UC-MTG Room 102
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DAILY MEETING SCHEDULE ICS 230-CG (Rev.07/04)	DAIL V ME	ETING SOUT	DUIE		CS 230-CG (Rev.07/04)









Tonight -

# lational Weathe

# Pasadena, TX

Enter Your "City, ST" or zip code



Cell Phone Weather Link: www.srh.noaa.gov/wml

En Español

Last Update: 6:04 pm CDT Sep 11, 2007

Saturday

Forecast Valid: 8pm CDT Sep 11, 2007-6pm CDT Sep 18, 2007

# NWS Houston, TX

Point Forecast: Pasadena, TX 29.66N -95.16W

Forecast at a Glance

Wednesday	Wednesda
	Night
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Chance Tstms Lo 74°F



Likely Hi 87°F



Tstms Lo 74°F



Likely Hi 85°F



Tstms Lo 75°F



Likely Hi 88°F



Chance Tstms Lo 75°F

40% Chance

**Tstms** Hi 89°F



Chance Tstms Lo 76°F

# PREMISOR PROPERTY.

Hazardous weather condition(s):

### Flood Statement Hazardous Weather Outlook **Short Term Forecast**

Tonight: Scattered showers and thunderstorms. Partly cloudy, with a low around 74. North wind around 5 mph. Chance of precipitation is 30%.

Wednesday: Showers and thunderstorms likely, mainly after 1pm. Mostly cloudy, with a high near 87. North wind around 5 mph becoming east. Chance of precipitation is 60%.

Wednesday Night: A 40 percent chance of showers and thunderstorms. Mostly cloudy, with a low around 74. Southeast wind around 5 mph.

Thursday: Showers and thunderstorms likely. Mostly cloudy, with a high near 85. South wind between 5 and 10 mph. Chance of precipitation is 60%.

Thursday Night: A 40 percent chance of showers and thunderstorms. Mostly cloudy, with a low around 75. South wind around 10 mph.

Friday: Showers and thunderstorms likely. Mostly cloudy, with a high near 88. Chance of precipitation is 60%.

Friday Night: A 30 percent chance of showers and thunderstorms. Mostly cloudy, with a low around 75.

Saturday: A 40 percent chance of showers and thunderstorms. Partly cloudy, with a high near 89.

Saturday Night: A 30 percent chance of showers and thunderstorms. Partly cloudy, with a low around 76.

Sunday: A 30 percent chance of showers and thunderstorms. Partly cloudy, with a high near 90.

### Current Conditions

[Move Down]

**Houston / Ellington** Lat: 29.62 N Lon: 95.17 W Elev: 39 ft Last Update on Sep 11, 6:50 pm CDT

**Humidity:** 70 % Wind Speed: NE 7 MPH<sup>2</sup> **Thunderstorm** Barometer: 29.93" Dewpoint: 73°F (23°C) 84°F Heat Index: 91°F (33°C) (29°C) Visibility: 10.00 mi. More Local Wx: 2 Day History:

De alle de la marare la s

Move Up

Click Map for Forecast

# Agrifos Fertilizer, Inc-Pasadena Operations

To: Niell Irvin

From: R. Keith Darnell

**CC:** Robert Stewart, Sa Tran, Jim McClendon, Margaret Smith, Darrell Raymond

**Date:** 9/9/2007

Re: Plan to Treat Process Water Using the Water Treatment Plant

### 1. Background.

- 1.1. **General Arrangement** The Water Treatment Plant is a "single lime" system. The waters collected from the North & South moats of the #1 Gyp Stack are pumped to the Lime Mix Tank, where the pH is taken up to 10 10.5. This tank gravity flows to the Acid Mix Tank, where the pH is adjusted with sulfuric acid to a dischargable level (typically about 6 7). This tank flows to the Reactor, which allows residence time for the precipitated species to grow in size for improved settling. This tank gravity flows to the Water Treatment Clarifier. The Clarifier flows through a parshall flume into the Effluent Tank, where it mixes with CNPW (contaminated non-process Water) before being pumped to the upper wetlands. Total flow as well as pH are monitored. Clarifier underflow (sludge) is pumped to the top of the west side of #1 gyp stack. Treated water from this sludge percolates though the stack and is eventually re-worked through the treatment system.
- 1.2. Hydraulic Capacity The system has an approximate maximum instantaneous hydraulic capacity (ability to flow liquids through the unit) of 1,050 GPM (1.5 MMGPD). The unit is typically operated about 40 hours a week to handle "normal" water flows. This translates to about 0.375 MMGPD. Potential available hydraulic capacity is therefore (1.5 -0.375) = 1.125 MMGPD or a 780 GPM rate. The actual treatment capacity will be limited by the ability to treat the process water to a level that is acceptable to the Unified Command.

### 2. Proposed Changes to Treat Process Water.

### 2.1. General Changes -

- 2.1.1 The South and North Moats will be treated as normal to get their level down as far as possible before introducing the process water through a valve off the return line from the South Gyp Stack system. This valve is located on the SE comer of the South Moat.
- 2.1.2. The discharge line which normally goes to the upper wetlands will be disconnected and a new HDPE line will be run to discharge at the 002 outfall weir.

- 2.2. **Determination of Treatment Rate** Samples of time slurry and process water were taken. The process water was neutralized to a pH of 4, 6, and 10. The sample taken to a pH of 10 was taken back to below 9, which is a ph level that meets discharge criteria. The treated samples were filtered and the filtrates will be analyzed for all parameters of Agrifos' TPDES permit. A majority of the analysis requires an outside lab and results are expected back on Saturday afternoon. (The baseline numbers for the process water should be 24 hours later). With the initial results, the UC can decide which pH treatment level will be acceptable.
  - 2.2.1. Lime addition to the mix tank It is anticipated that this will be the initial bottleneck for treatment. Our current delivery system is capable of 40 60 GPM of flow to neutralize the acid. The flowing table shows theoretical treatment rates at various pH targets:

pH Target	Gal Ca(OH)2 Required per Gal of process water	Achievable treatment rates, GPM / (MMGPD)
4	0.0625	640 – 960 / (0.922 – 1.382)
6	0.167	240 – 359 / (0.346 – 0.517)
10	0.200	200 – 300 / (0.288 – 0.432)

2.2.2. Lime shipments (assuming a nominal 5,000 gallons per load) will be in the order of 12 – 18 truckloads per day. The storage tank has a nominal capacity of 20,000 gallons or about 4 truck loads. We have two established vendors and are trying to secure others to ensure uninterrupted supply.

### 2.3. Potential Issues / Concerns -

- 2.3.1. Sludge Handling The process generates a sludge from the formation of calcium fluoride / calcium phosphate calcium sulfate. The underflow sludge from the clarifier is pumped to the top of the west end of #1 Gyp Stack, where the water percolates through the stack and goes back through the treatment system. The effect of increased sludge generation will have to be closely monitored & may limit treatment rates.
- 2.3.2. Staffing We three personnel which are current their training. This should be enough to commence a 24 / 7 operation. Longer term operation would require realignment and retraining of others.
- 2.3.3. **Ammonia Levels in Effluent** Our treatment system was never designed & is not set up to remove ammonia. It will definitely exceed our permitted levels.
- 2.3:4. Additional Rainfall The #1 Stack and areas of the processing plant are in our "contained watershed" and as such must be treated before release. Handling these rain events as they occur could slow our treatment of process water.

DRAFT, 8 Sept. 2007

Resources at Risk for Initial Evaluation of Proposed Treatment/Emergency Discharge Plan Associated with the Cotton Patch Bayou Acid Incident

I. Spill Source Information. The following Resources at Risk analysis was prepared as part of the trade-off discussion to consider an emergency discharge partially treated water from a gypsum stack area into the Houston Ship Channel near Pasadena TX. The discharge rate would be between 200,000 and 250,000 gallons per day of treated water. The proposed on-site treatment would mitigate the acidity of the phosphoric acid and reduce other permitted constitutes of concern to within permitted standards with the exception of ammonia. At a rate of 200 gallons per minute, the ammonia values would be near the daily maximum, and over a month period, the daily average would be exceeded. With the addition of some flow through water for additional dilution, the average concentration of ammonia is estimated to be between 40 and 60 ppm in the discharge effluent.

The gypsum stack is operated by Agrifos. Agrifos is a fertilizing facility that extracts phosphorus from mineral ores. The byproduct wastes include phosphoric acid, gypsum, fluoride, sulfates, and processed water, which are often stored as large piles of solids. Surrounding the pile at the facility is a moat that contains processed water that is normally recycled. The moat water has a pH of 2.0 or less, and is mostly phosphoric acid solution

- **II.** Geographic Region Covered. The area covered by this report extends for the entire length of the Houston Ship Channel.
- III. Biological Resources at Risk. The main resources at risk are aquatic fish and shellfish. Fish species likely to be present in the Houston Ship Channel include black drum, red drum, blue and channel catfish common carp, striped and white bass, southern flounder, and speckled seatrout (based on fish sampled for tissue quality). Blue crab and shrimp are also likely to be present. The ship channel is not likely to be an important area for spawning habitat or juvenile fish rearing. According to a 1997 book by Oborney, the inland portion of the Houston Ship Channel and its major tributaries have exhibited a history of conditions unsuitable to sustain populations of aquatic life. He states that wastewater treatment in the Houston area has continually improved since the late 1960s. It also appears that aquatic life conditions in the Houston Bayou System are improving. An area once referred to as a "biological desert" is now capable of sustaining populations of aquatic life. Therefore, there is a significant risk of fish and shellfish kills from the controlled release.

### Ammonia:

According to the USEPA Ambient Water Quality Criteria for Ammonia (saltwater) published in 1989, available data on the acute toxicity of ammonia to 21 saltwater animals in 18 genera showed LC50 concentrations ranging from 0.23 to 43 mg NH3/L. Winter flounder is the most sensitive species, with a mean LC50 of 0.492 mg/L. The

mean acute sensitivity of 88 percent of the species tested was within a factor of ten of that for the winter flounder. Fishes and crustaceans are well represented among both the more sensitive and more resistant species; mollusks are generally resistant. For coastal marine or saltwater species, the available data provide no evidence that temperature or salinity have a major or consistent influence on the toxicity of NH3. Hydrogen ion concentration does increase toxicity of NH3 at pH below 7.5 in some, but not all species tested; above pH 8, toxicity may increase, decrease, or be little altered as pH increases, depending on species. Table 1 shows the USEPA water quality criteria for salt water aquatic life for ammonia.

Table 1. The maximum concentrations of total ammonia (TAN mg/liter) to protect fish health at 10 ppt seawater concentrations, based on EPA water quality criteria for ammonia (saltwater) published in 1989.

	-	Temperature °C			
	•	20	25	30	
рН				ž.	
7.0		62	44	29	
7.6		16	11	7.7	
8.0		6.4	4.6	3.1	

The aerial extent of impacts will be a function of the dilution rate. If we estimated an emergency acceptable level of 10 ppm in the receiving stream (note, this value has not been determined acceptable at this time), ammonia concentrations would have to be rapidly diluted in the receiving stream by a factor of 5. With a dilution factor of 10 or more, the ammonia levels should drop below those likely to affect fish and shellfish. What is not known at present is what dilution rate can be expected over time in the Houston Ship Channel, i.e., what would be the footprint of toxic ammonia concentrations. NOAA is considering a model that would assess the proposed discharge (this option is still being investigated). There should also be an assessment as to any eutrophication issues, before seeking RRT approval.

Note this assessment was prepared as part of the emergency response to the Cotton Patch Bayou Response at the Agrifos Facility, Pasadena TX. This document has not been extensively reviewed, and is intended only for evaluation of emergency response options by the incident command. Prepared by Jacqui Michel, consultant, and Charlie Henry, NOAA Scientific Support Coordinator.

Storage Work Group Findings Cotton Patch Bayou Release 07 September 8, 2007

Work Group (WG) Members: Tom Edwards, Roger Johnson, and Jim McClendon from Agrifos; Coast Guard - Commander Gatlin from Sector Houston; Commander Kammer from the Gulf Strike Team; Rob Tennyson representing EPA; Kelly Wilson (RP IC) representing Agrifos.

Purpose: Examine and recommend storage alternatives to prevent future releases of phosphoric acid contaminated water to the environment.

Approach: The workgroup evaluated on-site and off-site storage options using an "expanding square" approach. The group brainstormed all potential options and their limitations. Planning and estimates are based on 35 million gallons – the minimum deemed essential to mitigating current high levels at the South Stack and Stack 4. We did not evaluate treatment options. We did not consider cost as a limiting factor. We did consider environmental, logistical, and operational issues in rating the storage options. The work group assigned a qualitative (best judgment of the work group) color rating to the storage options as follows: Red – not viable based on limitations; Yellow – possible but need UC decision and/or further evaluation; Green – best available.

# **On-site options:**

- Add portable storage capacity on-site. The work group determined that it would take seven thousand (7,000) 5,000 gallon tanks (compatible with the pH 2 liquid) to store 35 million gallons. Benefits: eliminates "compounding effect" of open storage due to rain. Keeps substances completely contained from the environment. Limitations: Does not provide capacity flexibility. Acquiring, locating and managing the tanks present significant logistical issues. Rating: Red
- Create more moat space at base of the South Stack, especially at the east end. Benefits: none identified by the WG. Limitations: This was suggested at an early UC meeting. Removing soil or gypsum from near the retaining wall to allow more space for liquid is not recommended by the engineers. The failed area of the wall had a full soil layer against it when it suffered undermining effects; removing soil from other areas could lead to additional walls failures. There is no way to increase the wall height because of current high level of liquid. Rating: Red.
- Use moat space at Stack One (North and South moats) as temporary storage. Benefits: no significant benefits because capacity is only ~10% of minimum needed. Total capacity for both moats is approximately 4 million gallons. These moats are currently used to manage the facility's contact water which goes to the treatment plant for treatment and discharge. The facility needs some of this area to manage its contact water. These moats will also be needed if the throughput treatment option is approved by the UC. Rating: Red
- Pump contaminated water to West Jones Spoils Area w/ site improvements and liner. An engineering analysis has been conducted for this site for

containment and use as a gypsum stack. The site (Jones East and West) is already permitted for a gypsum stack. Benefits: Would gain 100 million gallons (maximum recommended operational level) of open storage capacity. Limitations: significant site improvements would need to be made to the site; a 200 ft set-back berm would be constructed; the containment wall would be increased by 10 vertical feet, and the "pond" would need to be lined with an HDPE liner. The holding pond would be subject to rain effects and would need to be actively managed to prevent overflow. The engineers estimated that site improvements would take 6 months if permitting and other logistical issues are addressed promptly. Rating: Yellow

- Pump contaminated water to West Jones Spoils Area w/ minimal site improvement and no liner. Benefits: Would give near-term relief of approximately 23 million gallons at a 1 foot depth level at the 70 acre site. Limitations: Soils are not suitable for unlined storage; the berms and outfall areas would need significant structural improvement even for a 1-2 foot capacity; rainfall would also need to be managed. This option could create long-term remediation issues due to soil permeability. A wildlife assessment may need to be conducted as well. Rating: Red
- Pump contaminated water to East Jones Spoils Area. Benefits: none identified by the WG. Limitations: Same as unlined Jones West location. This area would be significantly smaller than Jones West if an unlined option is considered further. Rating: Red
- Process Area and Wetlands. There is no viable storage in either of these areas.
- Stack Four. This area is already at maximum capacity (10 million gallons) and is part of the 35 million gallons we are trying to store at another location. Stack Four run-off is being pumped to the South Stack to minimize the chance of release at a second location.

### Off-Site options:

• Transport and store the contaminated water to another facility. The work group examined all neighboring facilities for storage capacity (Citgo, Magellan, Sheffield Steel; Kinder Morgan; Tessesderlo, Air Products, etc.). Limitations: None of the facilities have excess capacity, and there are no similar facilities to Agrifos; several of the local terminal companies are trying to expand their tankage locally but geography of the area is very limited. All the storage tanks identified are steel and are not compatible with the pH 2 water. The WG also discussed the possibility of using concrete containment areas if located, but none were identified. The WG deemed the likelihood of getting permission to store the liquid at another facility in an open-storage situation as extremely unlikely. Rating: Red

Note: the work group recommends inquiring with Gulf Coast Waste Disposal to see if they can store some liquid until treatment options are determined and implemented. Transportation of liquid is also a logistical issue. Rating: Yellow

• Divert county ditch run-off and use ditch as emergency containment. This was discussed but to fraught with problems to even rate. The storm run-off is unpredictable; the county would probably never agree; and the contaminated

- water would have to be pumped and treated quickly to minimize use of the ditch as a contingency.
- Use marine barges. The work group learned from Chief Tilimon that this option was considered but there are no marine barges available that are compatible with the material. It would take approximately 105 barges to hold approximately 25 million gallons and it would still have to be transported for treatment. Rating: Red
- Use rail cars. The work group determined it would take approximately 1700 rail cars to store 35 million gallons of water. Rating: Red

### Conclusions and recommendations:

The work group did not find any easy or relatively quick storage solutions. It does make the following recommendations:

- Develop a proposal and plan for the Jones West Spoils Area "lined" option including a complete list of issues and timeline for building and using for UC consideration by close of business Monday September 10<sup>th</sup>.
- Have UC Engage EXXON-MOBIL and EPA to determine exact status of the pending injection well permit. Being able to use the well by October could improve the short-term situation.
- Continue to examine transport of contaminated water to Gulf Coast Waste Disposal facility via pipeline for storage and/or disposal.

# **Disaster Scenarios and Response**

# Worst Case Scenario – Catastrophic Stack Failure:

- Spill of full contents of Pond Water (170 million Gallons of 2% Phosphoric Acid) with wash of Phosphogypsum.
- Involvement of neighboring rail yard, GATX & Crown Central Petroleum tank farms, other neighboring plants (Kinder Morgan, Air Products, and potentially others.)

# From historic spill on same site (different ownership):

Overview: On April 6, 1992, a 600-foot long section of retaining wall of a gypsum slurry pile failed at the Mobil Mining and Minerals facility in Pasadena, Texas, causing 45 million gallons of a 3 percent phosphoric acid and hydrated gypsum mixture to spill through a small bayou and into the Houston Ship Channel. Most of the material was released on that one day but leaking continued for several days. This mixture flooded control ditches, open fields, and bayous.

The spill caused significant injuries to freshwater, marine, and estuarine wildlife, fishes, invertebrates, plants and sediments. There was a significant loss of habitat for terrestrial and aquatic animals in the upland fields and drainage canals. There was also direct mortality to terrestrial animals, primarily ground-nesting birds, rodents, and reptiles. The injury to the surface waters was widespread. The spilled material had a Ph of 1.5. This adversely affected the water quality within approximately 7 miles of the Houston Ship Channel for at least one week.

NOAA http://www.darrp.noaa.gov/southeast/mobil/index.html

The current volume of pond water in the gypsum stack is approximately 3 times greater than the volume in 1992. The potential for impact upon neighboring industry and surrounding community has increased substantially.

# Weather or Production Interruption Scenario – Water in Excess of Storage Capacity:

Normal operations of the production facility operate in such a way that pond water should see a routine net loss. Water from the ponds is utilized during the production process. While some water is returned to the stack in the form of slurry, more water is consumed than is returned. Because the stacks are open to the elements, rain increases the pond water levels. Excessive rainfall, particularly when coupled with work stoppage, could result in pond levels above safe levels. When pond water levels exceed safe levels (12 inches from top) wave action creates an erosive danger to the structural integrity of the gyp stack.

### PREVENTIVE ACTIONS

To prevent catastrophic failure, diminished structural integrity or overwash, it is imperative to maintain levels of pond water at a level no higher than 12 inches from top of the gypsum stack. During normal operations, pond water is transferred among ponds

and moats, and is consumed in production processes. In the event total pond water volume surpasses on site storage capacity, emergency interventions may be necessary.

### Monitoring

To monitor the situation on an ongoing basis, Agrifos has developed a process to measure and record water levels. Water levels are measured in all stacks twice daily during daylight hours and moats are measured 4 times per day. Additionally, the gyp stacks are visually assessed daily for any breaches, leaks, seepage or structural failure.

### Interventions

### Treatment

Water may be treated in onsite treatment facility using established permitting already in place. There is concern about excess ammonia content for monthly average. Plan is to evaluate treating 200 gpm (288,000 gallons per day). Because this option would result in excess ammonia emissions, this is still under discussion. There is a potential for a temporary variance to allow release of this treated water into the Houston Ship Channel pending approval from TCEQ or Regional Response Team. Estimated timeline for variance consideration is Monday 9/10/2007.

### Controlled Release

The danger of catastrophic failure, exist when there is a freeboard less than twelve inches and/or winds in excess of 30 mph. If this occurs, the only option to prevent the failure of the stack wall is to pump liquids from the pond to the surrounding moat. The material will be treated within the moat area, to increase the pH levels, to reduce the impact to the environment.

### RESPONSE PLAN

### Ongoing

On an ongoing basis, the gypsum stacks are monitored daily as outlined above. When the gypsum stack water levels approach the minimum freeboard (12"), water is drained from the top to the bottom (into the moat). If the moats reach full capacity – due either to plant shutdown, severe weather, inability to process excess water, etc. – the procedure for Catastrophic Failure (above) is initiated.

### Catastrophic Failure

As per Emergency Preparedness Plan

- Person identifying problem dials 5555 or contacts security via radio to report problem.
- Security activates Emergency Siren System to call for Emergency (sounds
   Emergency Siren followed by instruction for all staff to report to designated rally
   points. See Map for rally points.)

- Account for all staff based on In-Plant Report. Check with Security for anyone signed out on the Stack Log.
- EOC is established in Administration Building

### **Notifications**

(The EOC call list from Emergency Preparedness Plan is attached as Appendix B)

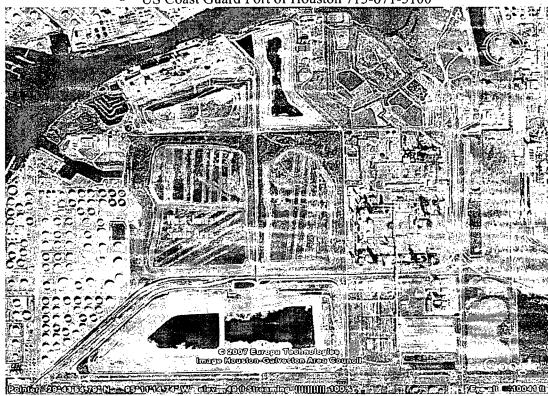
- Shift Supervisor
  - o Dial 911
  - o National Response Center 800-424-8802
  - o Chemtell 800-832-8224
  - o If event occurs outside of business hours, notify Agrifos Managers and Executives as listed in Emergency Preparedness Plan Section 21 Page 1.
- Notification of Neighboring Plants (May be handled by 911 Confirm)
  - o Air Products 713-477-6841
  - O Pasadena Refining Systems (PRSI) 713-472-2461 (formerly Crown Central Petroleum)
  - Chevron Philips 713-475-3624
  - o Kinder Morgan Pasadena Terminal 713-473-9271
  - Megellan Midstream (Across Channel) 713-453-6301 (formerly Williams Energy)
  - o Gulf Stream Marine Security 713-926-7611
  - o Green Earth, LLC 713-920-1850
  - o Steel & Pipe Supply Co. 713-472-5614 (formerly Bludworth)
  - o Dynergy Zone 1 713-450-7200
- Environmental Manager contacts:
  - o LEPC (713) 473-7646
  - o EPA Region VI (214) 665-6444
  - o Harris County Pollution Control Dept. 713-920-2831
  - o US Coast Guard (Spills) 800-424-8802
  - US Coast Guard Port of Houston 713-671-5100
  - o Update CAER Hotline (713) 246-0301 Instructions in Emergency Preparedness Manual Section 13 Pages 4-7.

### Evacuation

While risk to personnel in the immediate vicinity of the stack failure is great, the flow of pond water and gypsum slurry from a catastrophic failure would not be likely to inundate the main production facility at Agrifos. As such, no immediate evacuation of personnel would be necessary.

### **Controlled Release**

- Controlled release will be considered once the freeboard is found to be less that 12" and/or winds are expected to be in excess of 30 mph. The Unified Command will be responsible for the decision to begin a controlled release.
- Notifications (Phone numbers for notifications are listed in the EOC Call List from Emergency Preparedness Plan attached as Appendix B)
  - o Shift Manager Calls
    - Agrifos Managers and Executives according to Section 21, page 1.
    - Chemtell 800-832-8224
  - Environmental Manager contacts:
    - LEPC (713) 473-7646
    - EPA Region VI (214) 665-6444
    - Harris County Pollution Control Dept. 713-920-2831
    - US Coast Guard (Spills) 800-424-8802
    - US Coast Guard Port of Houston 713-671-5100



Rally points designated with yellow dots and numbers.

#### NEWS RELEASE #1

For Immediate Release September 7, 2007 9:30 p.m.

Contact: Steve Pierce Agrifos Fertilize: Inc. (281) 920-5361

### AGRIFOS STOPS RELEASE INTO COTTON PATCH BAYOU

(Pasadena, TX) --- Agrifos Fertilizer Inc. has stopped the release of a contaminated mixture of process water and rain water into Cotton Patch Bayou which flows into the Houston Ship Channel. The water will be pumped into an or-site storage pond prior to treatment at the plant's water treatment plant.

Agrifos was able to stop the release after forming a Unified Command organization at its Pasadena fertilizer plant and is working together with the U.S. Coast Guard, U.S. Environmental Protection Agency, Texas Commission on Environmental Quality, Texas Parks and Wildlife, and a team of environmental and release response specialists hired by Agrifos over the past three weeks.

The incident began August 16 when almost eight inches of heavy rains fell in a few hours over the Pasadena plant area. The heavy rainfall filled a containment wall ground a gypsum storage pile resulting from fertilizer production at the Pasadena plant. The contaminated rain water overflowed into the nearby Cotton Patch Bayou. While inspecting the release, Agrifos discovered a leak at the base of the concrete containment wall on August 17.

Agrifes immediately notified the Texas Commission of Environmental Quality (TCEQ) about the release, used sods ash to help neuralize the low levels of phosphoric acid in the rain water, sand bagged around the wall breach, and built a coffer dam to successfully stop the leak on August 20<sup>th</sup>.

However, another four inches of rain fell over the Pasadena area on September 1 causing mother overflow into Cotton Patch Bayou which Agrifos promptly reported to the TCBQ. If the wall had completely collapsed, between 25-35 million gallons of equaminated rain water could have flowed into the Houston Ship Channel.

more-

### Page 2 of 2

To relieve pressure on the wall, the company initiated an emergency pumping operation to pump water from behind the containment wall out into Cotton Patch Bayou.

An Agnifos inspection of the barge slip where Cotton Patch Bayou empties into the Houston Ship Channel showed low pH readings of 2.0 to 2.2 were only detected at the discharge pipe a half-mile away from the Ship Channel. Samples taken late Friday afternoon showed normal pH readings in the Channel.

"We sincerely regret that the release caused any impact to the environment, but the emergency pumping operation successfully prevented what could have been a much bigger environmental incident," said Agrifos manager Steve Pierce. "Working together with state and federal agencies, we have been able to stop the release and bring this incident under control. We especially appreciate the assistance of the U.S. Coast Guard and the Texas Commission on Environmental Quality to help us resolve this incident."

Work has already begun to make permanent repairs to the containment wall and to implement safety measures to prevent the incident from reoccurring.

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### AGRIFOS FERTILIZER INC. MATERIAL SAFETY DATA SHEET

Page 1 of 5 \*\*\*\*\*\* 1. PRODUCT IDENTIFICATION \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* POND WATER 24-HOUR EMERGENCY (CALL COLLECT): SUPPLIER: (713) 920-5431 CHEM TREC: AGRIFOS FERTILIZER INC. CHEMICAL NAMES AND SYNONYMS: PHOSPHORIC ACID/WATER (800) 424-9300 USE OR DESCRIPTION: PRODUCT AND MSDS INFORMATION: CONTAMINATED WATER (713) 920-5331 \*\*\*\*\*\*\*\*\*\*\* II. TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*\*\*\*\* ODOR: APPEARANCE: Clear Liquid Odorless pH: POUR POINT F(C): 2.4 NA VISCOSITY AT 40 C, CS: NA VISCOSITY AT 100 C, CS: FLASH POINT F(C): NA -ÑΑ BOILING POINT F(C): NE SOLUBILITY IN WATER: Complete MELTING POINT F(C): VAPOR PRESSURE -mmHg 20 C:NE RELATIVE DENSITY, 15/4 C: NE VOC NE NA = Not Applicable NE = Not Established D = Decomposes FOR FURTHER INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE \*\*\*\*\*\*\*\*\*\*\*\*\* JII. POTENTIALLY HAZARDOUS INGREDIENTS \*\*\*\* -EXPOSURE LIMITS----STEL NOTE mg/m3 ppm Source ppm CONTAMINATED WATER 100% COMPONENTS OF MIXTURE PHOSPHORIC ACID (7664-38-2) Agrifos OSHA ACGIH . NOTE: Limits shown for guidance only. Follow applicable regulations. ---INCLUDES AGGRAVATED MEDICAL CONDITIONS, IF ESTABLISHED-EFFECTS OF OVEREXPOSURE: Strong eye irritation. Strong skin irritation.

POND WATER

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### \*\*\*\*\*\*\*\* V. EMERGENCY AND FIRST AID PROCEDURES \*\*\*\*\*\*\*\*\*\* --- FOR PRIMARY ROUTES OF ENTRY---

EYE CONTACT: Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance, SKIN CONTACT: Wash contact areas with soap and water. Remove contaminated clothing. Get medical assistance. Launder contaminated clothing before reuse.

INHALATION: Remove from further exposure. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance and call a physician. If breathing has stonged, use mouth to mouth resuscitation.

Do not induce vomiting. Give 1 to 2 glasses of water. Get medical assistance and call a INCESTION: physician immediately. Do not induce vomiting or give anything by mouth to an unconscious

### \*\*\*\*\*\*\*\*\*\* VI FIRE AND EXPLOSION HAZARD DATA \*\*\*\*\*\*\*\*\*\*\*

EXTINGUISHING MEDIA: Not applicable.

SPECIAL FIRE FIGHTING PROCEDURES: This material will not burn; however, use standard chemical fire fighting procedures and consider the hazards of other involved materials. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparants.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors from hot material could form explosive mixtures with air.

Flash Point F(C): NA

Flammable limits - LEL: NA UEL: NA

NFPA HAZARD ID: -

Health: 2, Flammability: 0,

### 

STABILITY (Thermal, Light, etc.):

Stable

CONDITIONS TO AVOID:

Metals. Reaction of the material with metals can liberate

flammable hydrogen gas.

INCOMPATIBILITY (Materials to Avoid): Metals. Bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Phosphorus oxides.

HARDOUS POLYMERIZATION:

Will not occur:

### \* VIII. SPILL OR LEAK PROCEDURE \*\*\*\*\*\*

ENVIRONMENTAL IMPACT: Report spills as required to appropriate authorities. U. S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of accident or road spili notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Personnel performing cleanup must use

protective equipment. Absorb on fire retardant treated sawdust, diatomaceous earth, etc. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

WASTE MANAGEMENT: Dispose of waste at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

POND WATER Page 3 of 5 \*\*\*\*\*\*\*\*\*\*\*\* VIV. SPECIAL PROTECTION INFORMATION\*\*\*\*\*\*\*\*\*\*\* VENTILATION: Use in well centilated areas.

RESPIRATORY PROTECTION: Approved respiratory protective equipment must be used in high vapor or mist concentrations. No special requirements under ordinary conditions of use and with adequate ventilation. EYE PROTECTION: Chemical type goggles should be worn. SKIN PROTECTION: Protective clothing such as uniforms, coveralls or lab coats should be worn. Impervious gloves should be worn. Chemical resistant apron should be worn when handling bulk \* X. SPECIAL PRECAUTIONS \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* HANDLING: Avoid all personal contact. MATERIALS MUST BE LARELED AS FOLLOWS: Causes eye irritation. Causes skin irritation. \*\*\*\*\*\*\*\*\* XI. TOXICOLOGICAL DATA\*\*\*\*\*\*\*\*\*\*\*\*\* --- ACUTE TOXICOLOGY ---ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2,000 mg/lig). Based on testing of similar products and/or the components. DERMAL TOXICITY (RABRITS): Practically non-toxic (LD50: greater than 2,000 mg/kg). Based on testing of similar products and/or the compounts.

INHALATION TOXICITY (RATS): Not established.

EYE IRRITATION (RABBITS): Strong unitant. (Draize score: greater than 35 but 55 or less). Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Strong irritant. (Primary Irritation Index: 5 or greater but less than 6). Based on testing of similar products and/or the components. Governmental Inventory Status: All compounts comply with TSCA.

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

Transport Information: Please see Section XIV.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic leaching Procedure (TCLP). However, used product may be regulated.

U. S. Superfund Amendments and Reauthorization Act (SARA) Title III, this product contains no Extremely Hazardous Substances (EHS):

#### POND WATER Page 4 of 5 SARA (311/312) REPORTABLE HAZARD CATEGORIES: ACUTE This product contains the following SARA (313) Toxic Release Chemicals: CHEMICAL NAME PHOSPHORIC ACID CAS NUMBER CONC. 2.3% 7664-38-2 (COMPONENT ANALYSIS) The following product ingredients are cited on the lists below: CHEMICAL NAME CAS NUMBER LIST CITATIONS PHOSPHORIC ACID 7664-38-2 1, 10, 18, 19, 20, 21, (COMPONENT ANALYSIS) 23, 24, 25, 26 I = ACGIH ALL . 17 = CA P 65 18 = CA RTK 7=IARC 2A 8=IARC 2B 2 = ACGIII A1 23 = MN RTK 3 = ACGIH A2 13 = TSCA 5e 19 = FL RTK 4 = NTP CARC 9=OSHA CARC 14=TSCA 6 ... 20 = IL RTK25 = PA RTK 5 ~ NTP SUS 10 = OSHA Z 15 = TSCA 12b 21 = LA RTK Code Key: CARC = CARCINOGEN; SUS = SUSPECTED CARCINOGEN NOTE: AGRIFOS PRODUCTS ARE NOT FORMULATED TO CONTAIN PCBS. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\* XIII. INGREDIENTS\*\*\*\*\*\*\*\*\*\* INGREDIENT PERCENT CAS NUMBER PHOSPHORIC ACID 7664-38-2 CONTAMINATED WATER OTHER INGREDIENTS \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* XIV. TRANSPORT AND LABEL INFORMATION\*\*\*\*\*\*\*\*\*\* USA DOT: Environmentally y Hazardous Substances, Liquid, p.o.s. SHIPPING NAME: (contains PHOSPHORIC ACID) HAZARD CLASS & DIV: ID NUMBER: UN 3082 ERG NUMBER: 31

PG III NE

Νo

PACKING GROUP:

POISON:

DANGEROUS WHEN WET:

POND WATER

Page 5 of 5

LABEL(S): PLACARD(S): PRODUCT RQ: MARPOL III STATUS: Class 9 Class 9

217391 lbs. (contains PHOSPHORIC ACID)

IMO:

SHIPPING NAME: HAZARD CLASS & DIV: ID NUMBER: PACKING GROUP:

Not Standard Practice NA

NA NA

LABEL(S): MARPOL III STATUS: NA

ІСАОЛАТА:

SHIPPING NAME: HAZARD CLASS & DIV: SUBSIDIARY RISK: ID NUMBER: PACKING GROUP: LABEL(S):

Not Standard Practice

NΑ NA. NA

NA

REVISION DATE: 01/01/2007

DIFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR GGARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT ARE THEREFORE
USES ARE BEYOND OUR CONTROL, ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE
ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY
KIND AND NATURE. INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS.
FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILILITY OF THE
PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE
VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE
WARNINGS AND SAFEE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS
WITH MEDICAL PROPROSED OF THE PROPRIED OF THE PR AND USERS.

Prepared by:

Agrifos Fertilizer Inc. P. O. Box 3447 Pasadena, TX 77501

POND WATER-MSDS.doc

### MATERIAL SAFETY DATA SHEET Industrial Ground Gypsum Industrial Ground Gypsum

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United States Gypsum Company 125 South Franklin Street Chicago, Illinois 60680-4124 A Subsidiary of USG Corporation Product Safety: 1 (800) 507-8899 www.usa.com Version Date: October 8, 2003

SECTIONAL VEHEMICALIPRODUCT AND IDENTIFICATION

PRODUCT: Industrial Ground Gypsum

CHEMICAL FAMILY: Calcium Sulfate Dihydrate (CaSO4-2H2O)

### COMPOSITION: INFORMATION ON INGREDIENTS

MATERIAL		WT%	TLV (mg/m³)	PEL( mg/m³)	CAS NUMBER
Gypsum (CaSO4+2H2O)	, ·	100	10	15 (T) /5 (R)	13397-24-5
Crystalline Silica		<1	0.05(R)	0.1(R)	14809-60-7

(T) – Total (R) – Respirable (NE) – Not Established mmplc – million particles per cubic foot of air Respirable crystalline silica: IARC: Group 1 carcinogen, NTP: Known human carcinogen. The weight percent for silica represents total quartz and not the respirable fraction. Testing of dust from USG gypsum powders has not detected

Food and Drug Administration [CFR Title 21, v.3, sec 184.1230] – Celcium Sulfate is Generally Recognized as Safe (GRAS).

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory. All components of this product are included in the Canadian Domestic Substances List (DSL).

### HAZARD IDENTIFICATION

### INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings: Health: Fire: Reactivity;

HIMS Ratings: Health; Fire:

.0 Reactivity: 0

0 = Minimal Hazard

1 = Slight Hazard

2 = Moderate Hazard 3 = Serious Hazard

4 = Severe Hazard

Personal Protection: Use eye and skin protection. Use NIOSH/MSHA-approved respiratory protection when necessary,

\*Respirable crystalline silica can cause lung disease and/or cancer. 
E- Safety glasses, gloves and dust respirator EMERGENCY OVERVIEW: This product is not expected to produce any unusual hazards during normal use. Exposure

to high dust levels may irritate the okin, eyes, nose, throat, or upper respiratory tract.

### POTENTIAL HEALTH EFFECTS

### ACUTE:

Eyes: Airborne dust or direct contact can cause mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician.

Skin: Direct, prolonged or repeated contact with the skin may cause imitation.



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### SECTION 3 HAZARD IDENTIFICATION (continued)

### POTENTIAL HEALTH EFFECTS

#### ACUTE (continued):

Inhalation: Dust exposures generated during the handling of the product may irritate eyes, skin, nose, throat, and upper respiratory tract. Persons subjected to large amounts of this dust will be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician.

Ingestion: If ingested may cause temporary irritation to the gastrointestinal tract, especially the stomach. No known effects.

#### CHRONIC:

Eyes: None known. Skin: None known.

Ingestion: No known effects.

Inhalation: Testing of dust from USG gypsum powders has not detected respirable crystalline silica. Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing.

Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration.

TARGET ORGANS: Eyes, skin and respiratory system.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact.

### SECTION 4. FIRST: AID MEASURE

### FIRŜT AID PROCEDURES

Eyes: In case of contact, do not rub or scratch your eyes. Flush thoroughly with water for 15 minutes to remove particles. If inflation persists, consult physician.

Skin: Wash with mild scap and water. A commercially available hand lotion may be used to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing. If Irritation persists, consult physician.

Inhalation: Remove to fresh eir. Leave the area of dust exposure and remain away until coughing and other symptoms subside. Other measures are usually not necessary, however if conditions warrant, contact physician.

Ingestion: This product is not intended to be ingested or eaten. No harmful effects expected. No specific recommendations. If gastric disturbance occurs, call physician.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Pre-existing skin diseases such as, but not limited to, rashes and dermatitis.

### SECTION 5 FIRE FIGHTING MEASURES

General Fire Hazards:

Not executed to him

Extinguishing Media:

Not expected to burn,

Special Fire Fighting Procedures:

Water or use extinguishing media appropriate for surrounding fire. Wear appropriate personal protective equipment (See section 8).

Unusual Fire & Explosion Hazards:

None

Hazardous Combustion Products:

Above 1450° C - decomposes to calcium oxide (CaO) and sulfur dioxide (SO<sub>2</sub>)

### MATERIAL SAFETY DATA SHEET Industrial Ground Gypsum

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### SECTION STIRE FIGHTING MEASURES((continued))

Flash Point: None Known Auto Ignition: Not Applicable Hethod Used: Not Applicable Upper Flammable Limit (UFL): Not Applicable Classification: Not Applicable Lower Flammable Limit (LFL): Not Applicable Rate of Burning: Not Applicable

SECTION 6

ACCIDENTAL RELEASE MEASURES

#### CONTAINMENT:

No special precautions. Wear appropriate personal protection (See Section 8).

#### CLEAN-UP:

Use normal clean up procedures. Wear appropriate protective equipment. Ventilate area. If dry, shovel or sweep up material from spillage and place collected material into a container for recovery or waste disposal. Avoid dust generation. Avoid inhalation of dust and contact with eyes and skin. Maintain proper ventilation. If vacuum is used to collect dust, use an industrial vacuum cleaner with a high efficiency air filter. If sweeping is necessary, use dust suppressant. Do not use compressed air for clean up. These procedures will help minimize potential exposures. If . washed down, may plug drains.

#### DISPOSAL

Follow all local, state, provincial and federal regulations. Never discharge large releases directly into sewers or surface waters. Trace amounts of residue can be flushed to a drain, using plenty of water.

### SECTION 7 HANDLING AND STORAGE

### HANDLING

Minimize dust generation and accumulation. Avoid breathing dust. Wear the appropriate respiratory protection against dust in poorly ventilated areas and if TLV is exceeded (see Sections 2 and 8). Avoid dust contact with eyes. Wear the appropriate eye protection against dust (See Section 8).

Use good safety and industrial hygiene practices.

### STORAGE:

Store at room temperature in a dry location.

Keep containers closed when not in uso

### SECTION 8

### EXPOSURE CONTROLS / PERSONAL PROTECTION

### **ENGINEERING CONTROLS:**

Provide ventilation sufficient to control airborne dust levels especially respirable crystalline silica.

If user operations generate airborne dust, use ventilation to keep dust concentrations below permissible exposure limits (See Section 2).

Where general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to control dust levels below permissible exposure limits (see Section 2). If engineering controls are not possible, wear a properly littled NIOSH/NSHA-approved particulate respirator.

### MATERIAL SAFETY DATA SHEET Industrial Ground Gypsum

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### SECTION SIEXPOSURE CONTROLS / PERSONAL PROJECTION (continued)

### RESPIRATORY PROTECTION:

Wear a NICSH/IJSHA-approved respirator equipped with particulate cariridges when dusty in poorly ventilated areas, and if TLV is exceeded. A respiratory program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions werrant a respirator's use.

### OTHER PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face: Wear eye protection (safety glasses or goggles) to avoid particulate imitation of the eye.

Skin: Gloves or protective clothing are usually not necessary but may be desirable in specific work situations. For brief contact, no precautions other than clean body-covering clothing should be needed. Wear gloves and protective clothing to prevent repeated or prolonged skin contact. Barrier creams or skin lotion may be applied to face, neck, wrist and hands when skin is exposed to help prevent drying of skin.

General: Selection of Personal Protective Equipment will depend on environmental working conditions and operations.

### SECTION 9 XPHYSICAL AND CHEMICAL PROPERTIES

Appearance	White to off white	Viscosity	Not Applicable
Physical State	Solid (powder)	Solubility (H2O)	- 0.21 g/100 g solution
Odor	Low to no odor	Boiling Point	Not Applicable
pH @ 25 ° C	~7	Melting Point	Not Applicable
Particle Size	Varies	Softening Point	Not Applicable
Molecular Weight	~172 g/mole	Freezing Point	Not Applicable
Bulk Density	~ 45-150 lb/ft3	Vapor Density (Air = 1)	Not Applicable
Specific Gravity (H <sub>2</sub> 0 = 1)	2.3-2.5	Vapor Pressure (mm Hg)	Not Applicable
Percent Volatile	Zero	Evaporation Rate (BuAc = 1)	Not Applicable
VOC Content	Zero	,	

### SECTION: 10

STABILITY:

Stable.

CONDITIONS TO AVOID:

Contact with incompatibles.

INCOMPATIBILITY:

None known.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: Above 1450° C - decomposes to calcium oxide (CaO) and sulfur dioxide (SO<sub>2</sub>

### SECTION 11. TOXICOLOGICAL INFORMATION.

### ACUTE EFFECTS:

Direct contact may cause eye, skin and/or respiratory imitation.

LD<sub>so</sub> Not Available for product.

LC<sub>50</sub>: Not Available for product.

100

## MATERIAL SAFETY DATA SHEET Industrial Ground Gypsum

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### SECTION 11 TOXICOLOGICAL INFORMATION (continued)

### CHRONIC EFFECTS / CARCINOGENICITY:

Crystalline silica: Testing of dust from USG gypsum powders has not detected respirable crystalline silica. Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing.

Prolonged and repeated exposure to airporne free respirable crystalline silica can result in lung disease (i.e., sliicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of

developing silicosis is dependent upon the exposure intensity and duration.
In June, 1997, IARC classified crystalline silica (quartz and cristobalite) as a human carcinogen. In making the overall evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances ctudied. Cardinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.

IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to

### ECOLOGICAL INFORMATION:

ENVIRONMENTAL TOXICITY: This product has no known adverse effect on the ecology. A large discharge directly into waterways would not be expected to kill aquatic life: Ecotoxicity value: Not determined.

### SECTION 13 \* DISPOSAL CONSIDERATIONS

### WASTE DISPOSAL METHOD:

Dispose of material in accordance with Federal, State, Provincial, and Local regulations. Consult with environmental regulatory agencies for guidance on acceptable disposel practices. Never discharge directly into sewers or surface

### SECTION 14 TRANSPORTINFORMATION:

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

Shipping Name.

Same as product name.

Hazard Class:

Not classified

UN/NA#:

None. Not classified.

Packing Group:

None.

Not applicable.

Label (s) Required:

Not classified.

GGVSec/MDG-Code: ICAO/IATA-DGR:

Not applicable.

RID/ADR:

None

ADNR:

None



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SECTION 15 REGULATORY INFORMATION

### UNITED STATES REGULATIONS

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

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100	NL	NL	NI.	NI,	NL:	ΝĿ
<1	NL	1.T	NL	NL	141.	Кb
	100				100 NL NL NI. NI.	100 NE NE NI NL NL

NL = Not Listed
SARA Title III Section 302 (EPCRA) Extremely Hazardous Substances: Threshold Planning Quantity (TPQ)
SARA Title III Section 304 (EPCRA) Extremely Hazardous Substances: Reportable Quantity (RQ)
SARA Title III Section 313 (EPCRA) Toxic Chemicals: X= Subject to reporting under section 313
CERCLA Hazardous Substances: Reportable Quantity (RQ)
CAA Section 112 (r) Regulated Chemicals for Accidental Release Prevention: Threshold Quantities(TQ)
RCRA Hazardous Wasta: RCRA hazardous waste code



Food and Drug Administration [CFR Title 21, v.3, sec 184.1230] - Calcium Sulfate is Generally Recognized as Safe (GRAS).

### **CANADIAN REGULATIONS**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. All components of this product are included in the Canadian Domestic Substances List (DSL).

MATERIAL	WT%	IDL Item#	WHMIS Classification:
Gypsum (CaSO4 • 2H2O)	100	Not Listed	Not Listed
Crystalline Silica	` <1	1406	D2A

IDL Item#: Canadian Hazardous Products Act - Ingredient Disclosure List Item# WHMIS Classification: Workplace Hazardous Material Information System

### CARCINOGENICITY CLASSIFICATION OF INGREDIENT(S)

All substances listed are associated with the nature of the raw materials used in the manufacture of this product and are not independent components of the product formulation. All substances, if present, are at levels well below regulatory limits. See Section 11: Toxicology information for detailed information

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MATERIAL	IARC	NTP	ACGIH	CAL- 65
Respirable Crystalline Silica	1 1	11	A2 .	Listed

IARC - International Agency for Research on Cancer (World Health Organization)

- 1- Carcinogenic to humans
- 2A Probably carcinogenic to humans
- 28 Possibly cardinogenic to humans
- 3 Not classifiable as a carcinogen
- 4 Probably not a carcinogen



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### SECTION 15 REQUITATION (INFORMATION (Continued)

NTP - National Toxicology Program (Health and Human Services Dept., Public Health Service, NIH/NIEHS)

- 1- Known to be carcinogen
- 2- Anticipated to be carcinogens

ACGIH - American Conference of Governmental Industrial Hygienists

- A1 Confirmed human carcinogen
- A2 Suspected human carcinogen
- A3 Animal carcinogen
- A4 Not classifiable as a carcinogen
- A5 Not suspected as a human carcinogen

CAL-65 - California Proposition 65 "Chemicals known to the State of California to Cause Cancer"

### Label Information ∆WARNING!

Dust created from product may cause eye, skin, nose, throat or upper respiratory irritation. Avoid Inhalation of dust and busic related from product may be use eye, sain, rose, private of upper respiratory infrastron. Avoid mission of our eye contact. Use in a well-ventilated area, Wear a NIOSH/MSHA-epproved respirator when dusty. Use proper ventilation to reduce dust exposure. Wear eye protection. If eye contact occurs, flush thoroughly with water for 15 minutes. If irritation persists, call physician. Wash thoroughly with soap and water after use. Do not ingest. If ingested, call physician.

Product safety information: (800) 507-8899 or www.usq.com KEEP OUT OF REACH OF CHILDREN.

Key/Legend

TLV Threshold Limit Value PEL Permissible Exposure Limit

CAS Chemical Abstracts Service (Registry Number) NIOSH National Institute for Occupational Safety and Health

MSHA Mine Safety and Health Administration Occupational Health and Safety Administration **OSHA** 

**ACGIH** American Conference of Governmental Industrial Hygienisis

IARC International Agency for Research on Cancer United States Department of Transportation DOT United States Environmental Protection Agency EPA NFPA National Fire Protection Association

Hazardous Materials Identification System **HMIS** PPE Personal Protection Equipment

TSÇA Toxic Substances Control Act. Canadian Domestic Substances List DSL. Canadian Non-Domestic Substances List NDSL

SARA Superfund Amendments and Reauthorization Act of 1986

**RCRA** Resource Conservation and Recovery Act

CERC! A Comprehensive Environmental Response, Compensation and Liability Act of 1980

UN/NA# United Nations/North America number CFR Code of Federal Regulations

WHMIS Workplace Hazardous Material Information System



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SECTION 16 OTHER INFORMATION (continued)

Prepared by: Product Sofety USG Corporation 125 South Franklin St. Chicago, Illinois 60606

END

### Ardaman & Associates, Inc. MEMORANDUM

TO:

Tim Cotton, Agrifos Fertilizer Inc.

FROM:

Nadim F. Fuleihan, Sc.D., P.E

DATE:

September 10, 2007

SUBJECT:

Emergency Situation Requiring Immediate Action, Agrifos Phosphogupsum

Stack System, Pasadena, Texas

FILE NO:

07-122

As requested, I and my associate, Rob Werner, visited the site today to inspect firsthand the emergency situation that developed recently at the Agrifos phosphogypsum stack system in Pasadena Texas, and I participated in a meeting this afternoon with members of your Houston staff, other consultants, and representatives from the TCEQ, EPA, NOAA and Coast Guard as well as Exxon-Mobil and Terra. This memorandum summarizes key points that I made during the meeting and, in particular, the urgent need to remove process water from the system in a controlled manner in order to minimize the risk of subjecting the area to an uncontrolled catastrophic spill of much greater magnitude.

As a result of recent extreme rainfall events, the concrete wall surrounding the moat was reportedly overtopped on two occasions and one section of wall was subjected to uplifting of its foundation resulting in another release of process water from the system through the bayou into the Houston Ship Channel. During my inspection on September 10, 2007, the process water in the moat around the South Stack was essentially within inches of the rim of the wall at the depressed overflow section of the wall, and the gypsum stack was essentially full to capacity, with only about one foot of freeboard remaining in one of the compartments and about 18 inches of minimum freeboard remaining in the other compartment where the dike had recently been raised. Moreover, the North Stack (Stack No. 4) was also essentially full with about one toot of freeboard remaining in both the compartment atop the stack and the surge pond at the toe of the stack. In my professional opinion, this situation represents an extreme emergency requiring immediate action for the following reasons:

- One foot of freeboard on top of the stack is the absolute minimum that can be tolerated even under the most extreme emergency conditions because any additional rainfall on the stack or any significant sustained wind will likely cause overtopping and erosion of the crest road, potentially leading to an uncontrolled failure and a massive spill from a great height, with correspondingly high kinetic energy. The stack should normally be operated with 3.5 feet of freeboard, and the water level should only be allowed to surge to within one foot of the crest during extreme emergency water conditions and for a very short period of time because the risk of failure is high when the design freeboard is compromised as in the present situation.
- With only one foot of freeboard on top of the South Stack, the rim-ditches alop the stack
  in one of two compartments are submerged below water and can no longer be
  effectively used to quickly raise the perimeter gypsum dikes, thus aggravating an
  already critical condition over time. Moreover, the extent of any gypsum beaches

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inboard of the rim-ditch is minimal, further complicating dike raising efforts with the current high water levels.

- The most is essentially full almost to the overflow level, and the watershed of the most encompasses a much larger stack slope area, so any small quantity of rainfall is likely to cause an uncontrolled release of process water from the relatively narrow most, potentially undercutting the wall fooling at the overflow location.
- Whereas the concrete wall surrounding the most may be able to accommodate temporary surges in water level and the wall is structurally sound, it does not incorporate cut-off features that would control piping under sustained high water conditions. Hence, if the water level is not lowered in short order, there is a high likelihood that internal erosion might progress at potentially more than one location leading to undercutting and possibly overturning of some wall segments with associated uncontrolled releases of process water.
- The critical condition described above is further aggravated by the fact that we are still in the midst of the rainy season and potentially in an active humicane season, and every inch of rainfall adds about 9 Million Gallons of water to the system. With an overall watershed to ponded area ratio (i.e., surge ratio) on the order of 3, the average water level in the system is expected to surge by about 3 inches in response to each inch of precipitation. For the moat surrounding the South Stack, the surge ratio is as high as 10, and, hence overtopping of the moat is quite likely under current conditions. Unless a significant quantity of process water is consumed or discharged in short order, the emergency situation is likely to be sustained for at least several months, through the humicane season and possibly beyond, with continued threats of imminent accidental spill(s).
- In order to assist in alleviating this extreme emergency situation, it is recommended that
   Agrifos continue to operate the plant in a manner that optimizes process heat
   evaporative losses, and at the same time inform the regulatory agencies of the urgent
   need to remove process water from the system in a controlled manner in order to
   minimize the risk of an accidental spill, restore safe phosphogypsum stack system
   operating procedures (3,5-foot freeboards), and provide conditions suitable for raising
   the gypsum dikes.

To expedite removal of process water under such emergency conditions, it is recommended that Agrifos seek approval to: (i) discharge process water at the highest sustainable rate after adjusting the pH to above 3.5 (and preferably to about 4.0) by the controlled addition of soda ash or caustic. (ii) concurrently discharge lime treated process water routed through the Waste Water Treatment Plant with a pH in the range of 4.0 to 7.0 as long as the emergency conditions prevait; and (iii) explore any other possible means of consumption or water storage for potential implementation in the intermediate (as opposed to immediate) term.

Mr. Stewart,

I have put the bullet points at the bottom of this page.

If you take pond water and treat it to a pH of about 4 with Lime, you will lower the F in the water from 8600 ppm to about 90 ppm; more importantly, the Fluoride is fixed as calcium fluoride (CaF2) and will not be soluble in water. The solids will settle to about 30% by weight and can be put directly onto the gyp stack without comprimising its integrity.

At a pH of 4 the P2O5 in the water will be lowered from 2.08% to about 1%. The ammonia in solution will not be touched. At a pH of 5.5, you will still have about 90 ppm F in the water but only 0.45% P2O5 in solution.

The lime consumption should be used to eliminate the F first and therefore I would go to a pH of 4. This will maximize the amount of water that will be treated.

If the pH 4 solids are removed, as you correctly stated, you now have a very weak fertilizer solution. This water can be sprayed on the land. Even if the P2O5 in the water is too high for the current plants and they die, because you removed the Fluoride, by next year those plants will be back. It is sort of like putting fresh dung on a plant, the plant may die, however by next year they will be back and healthier than ever. Most of the Phosphates should react with metals in the soil and be fixed.

- TREAT the POND WATER with LIME TO AT LEAST 4.0 pH, 5.0 IS BETTER
- SEPARATE THE SOLIDS AT pH 4-5 and SEND THEM TO THE GYP STACK
- SPRAY THE CLARIFIED WATER ON PLANTS

The underflow solids will only take up about 5-8% of the original volume of the water. It will only displace about 1 million gallons of water if put back in the pond or the equivalent volume in thw Gyp Stack.

I hope that this helps

Cotton Patch Bayou Release '07 Randy Anzalone report
September 11, 2007 1430

### Transportation:

Contacted Jay Simmons 0815 today of Lake Mary Marine 225-405-6954. Fax 225-767-8700.

Reference: barges located in New Orleans, LA

2 ea. 10,000 bbl barges 2 ea. 20,000 bbl barges

Reference: barges located at Houston, TX

1 ea. 10,000 bbl barge 2 ea. 20,000 bbl barges

Discussion: Requested contracts to secure barges be forwarded to Steve Pierce, Manager Supply and Business Development, Agrifos, 713-920-5361 fax 713-920-5332. Spoke with Steve regarding contracts and he informed he would handle contracts.

### **Disposal Options:**

Contacted Renee Butler, Univar, 713-412-4634. Fax 713-641-5423.

Reference: samples and waste profile.

Discussion: Renee requested we provide (5) one quart samples of 2 pH fertilizer material. Contacted R. Keith Darnell 281-923-2064 regarding disposal samples. Keith will provide samples. Spoke with Renee 1447 she will pick up samples and MSDS Wednesday morning, 9-12-07.

Contacted Vicky, Liquid Environmental 713-671-4800 at 0841 today. Awaiting response.

Received call from Matt Allen, Texas Environmental Quality that if we would order a vacuum truck to begin shipping to contact Shane Miller at Texas Molecular that arrangements had been made to accept our profile. Robert Stewart was contacted and vacuum truck ordered.

Contacted Shane Wilson, Texas Molecular 713-647-1995 at 1233 today. Shane is emailing Brian Graves, EPA, waste profile. Shane stated permitted to discharge 500 gal/min but were not able to dispose at their permitted volume. Shane will give particulars to Brian Graves of EPA.

Contacted Jay Simmons 1445 today, Lake Mary Marine stated owner not willing to lease us barges due to nature of product. Wants to know if we can treat waste to neutralize. Will follow up with them as soon as possible.

Tuesday, September 11, 2007 1648 Texas Molecular (Debbie Payne) received Agrifos product profile and MSDS. Will contact Roger Johnson for additional information. Sample provided for Texas Molecular's evaluation.

Tuesday, September 11, 2007 1845 No approval from Texas Molecular received MSDS and Profile to Texas Molecular. Due to not being able to receive approval of waste profile from Texas Molecular, tank truck loaded and ready to go was ordered to be unloaded and washed out to prevent potential unwanted release.

Agrifos Fertilizer Inc.
Process Water Balance - Levels Changes in Ponds and Moats

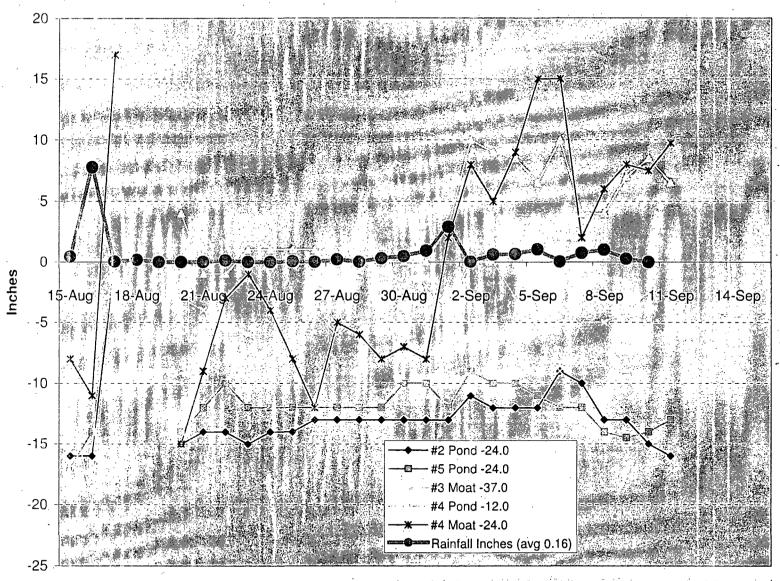
Date			Ļ	evel in inch	es			Rainfall	Total		Addition of Rainfall Water to (million gallons)				ns)
	#1 North	#1 South	#2 Pond	#5 Pond	#3 Moat	#4 Pond	#4 Moat	inches	MM gals	Plant	#2 Pond	#5 Pond	#3 Moat	#4 Pond	#4 Moat
							men da jar. Najvazio es	1.0	10.6	2.6	1.2	0.7	4.7	0.4	0.9
Desired (inch)	-36	-36	-24.0	-24.0	-37.0	-12.0	-24.0	0.16	<b>1.7</b>	0.4		0.1	0.8	0.1	0.1
Area (acres)	0.5	4.5	44.0	26.0	17.5	15.0	4.2		389.0	97.0	44.0	26.0	174.0	15.0	33.0
· · · · · · · · · · · · · · · · · · ·					<del></del>						<u> </u>	<u> </u>			
		· · ·							<del> :</del>		,		<del> · - · · ·</del>		
9/15/2007					·					-					·
9/14/2007							•								
9/13/2007		-													
9/12/20 <b>07</b>				·			•				-				
9/11/20 <b>07</b>	-47	-61	-16	-13	6.50	-3	9.75						-÷.		
9/10/2007	-44	-50	-15	-14	8.50	-2.5	7.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/9/20 <b>07</b>	-58	-47	-13	-14.5	7.00	-4	8.00	0.3	2:9	0.7	0:3	0.2	1.3	0.1	0.2
9/8/2007	<b>-3</b> 9	-48	-13	-14	4.00	-5	6.00	1.0	10.8	2.7	1.2	0.7	4.8	0.4	0.9
9/7/20 <b>0</b> 7	-52	-45	-10	-12	4.00	-5	2.00	0.8	7.9	2.0	0.9	0.5	3.5	0.3	0.7
9/6/20 <b>0</b> 7	47	-45	-9	-12	10.00	-9	15.00	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0
9/5/20 <b>07</b>	-52	-45	-12	-11	6.50	-6	15.00	1.1	11.2	2.8	1.3	0.7	5.0	0.4	0.9
9/4/2007			-12	-10	8.50	-3	9.00	0.7	7.1	1.8	, 0.8	0.5	3.2	0.3	0.6
9/3/2007			-12	-10	9.00	0	5.00	0.6	6.6	1:6	0.7	0.4	2.9	0.3	0.6
9/2/2007			-11	-9	10.00	0	8.00	0.0		0.1	0.0	0.0	0.1	0.0	0.0
9/1/2007			-13	-12	3.00	-4	2.00	2.9	30.8	7.7	3.5	2.1	13.8	1.2	. 2.6

IAP Period 5

# Agrifos Fertilizer Inc. Process Water Balance - Levels Changes in Ponds and Moats

Date	-		Le	vel in inch	es			Rainfall	Total		Addition o	of Rainfall V	Vater to (m	nillion gallo	ns)
	#1 North	#1 South	#2 Pond	#5 Pond	#3 Moat	#4 Pond	#4 Moat	inches	MM gals	Plant	#2 Pond	#5 Pond	#3 Moat	#4 Pond	#4 Moat
								1.0	10.6	2.6	1.2	0.7	4.7	0.4	0.9
Desired (inch)	-36	-36	-24.0	-24.0	37.0	-12.0	-24.0	0.16	1.7	0.4	<u> </u>	. 0.1	0:8	0.1	0.1
Area (acres)	0.5	4.5	44.0	26.0	17.5	15.0	4.2		389.0	97.0	44.0	26.0	174.0	15.0	33.0
8/31/2007			-13	-10	0.00	-2	-8.00	0.9	9.9	2.5	1.1	0.7	4.4	0.4	0.8
8/30/2007			-13	-10	0.00	-3	-7.00	0.5	5.1	1.3	0.6	0.3	2.3	0.2	0.4
8/29/2007	·		-13	-12	0.00	-5	-8.00	0.3	3.3	0.8	0.4	0.2	1.5	0.1	0.3
. 8/ <b>2</b> 8/20 <b>07</b>			-13	-12	0.00	-5	-6.00	0.0	0.2	0.1	0.0	0.0	0.1	0.0	0.0
8/27/2007			-13	-12	0.00	-6	-5.00	0.2	2.2	0.6	0.3	0.1	1.0	0.1	0.2
8/26/2007	·		-13	-12	1.00	-4	-12.00	<u>0</u> .0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8/25/2007			-14	-12	1.00	-5	-8.00	. 0.0	0.4	0.1	0.0	. 0.0	0.2	0.0	0.0
8/24/2007			-14	12	1.0Ó	-6	-4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	· 0.0
8/23/2007			15	-12	1.00	-6	-1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8/22/2007			-14	-10	-1.00	-6	-3.00	0.1	1.4	0.3	0.2	0.1	0.6	0.1	0.1
E/21/20 <b>0</b> 7			-14	-12	-1.00	-4	-9.00	0.0	0.0	0.0	0.0	0.0	. 0.0	0.0	0.0
8 <sup>2</sup> 20/20 <b>0</b> 7			-15	-14	4.00	-3	-15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8/19/20 <b>0</b> 7						,		0.0	0.0	0.0	0.0	. 0.0	. 0.0	0.0	0.0
8/18/2007							,	`0.2	1.9	0.5	0.2	0.1	0.9	0.1	0.2
· 8/17/20 <b>07</b>			0	0	0.00	0	17.00	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0
8/16/2007			-16	-14	-20.00	-3	-11.00	7.8	82.2	20.5	9.3	5.5	36.8	3.2	7.0
8/15/2007	÷		-16	-17	-11.00	-4	-8.00	. 0.4	. 4.7	1.2	0.5	0.3	2.1	_0.2	0.4
Total Rainfall for	Month			_											
Aug-07						_		11.6	123.0	30.7	13.9	8.2	55.1	4.7	10.4
Jul-07							ē	12.7	134.5	33.5	15.2	9.0	60.2	5.2	1.1.4
Jun:07					· · · · · · · · · · · · · · · · · · ·			7.5	79.5	19.8	9.0	5.3	35.6	3.1	6.7
May-07		<u></u>	-		. :			13.4	141.4	35.2	16.0	9.4	63. <u>3</u>	5.5	12.0
Apr-07								4.8	50.6	12.6	5.7	3.4	. 22.7	2.0	4.3
Mar-07					<u> </u>			7.4	77.8	19.4	8.8	5.2	34.8	3.0	6.6
Feb-07								2.0	21.1	5.3	2.4	1.4	9.5	0.8	1.8
Jan-07								7.4	77.8	19.4	8.8	5.2	34.8	3.0	6.6

Agrife的PFertificer Inc
Process Water - Level in Ponds and Moats



Agrifos Fertilizer Inc.
Process Water Balance - Calculated Volume Changes

Date		- <del> </del>	Change in	Volume (	MM gals)	,	''	Total:	Rainfall	Total	Comments
	#1 North					#4 Pond	#4 Moat	vol change	inches	MM gals	
Desired level (inch)	-36.0	-36.0	-24.0	-24.0	-37.0	-12.0	<b>#-24.0</b>		0.16	1:7	Yearly rainfall average = 60 inches
Area (acres)	0.5	4.5	44.0	26.0	17.5	15.0	4.2		THE TO SHEET OF THE SECOND SEC	0.070 . 07	Total rainfall water collected acreage = 389
Cap before Discharge	0.4	5.0	4.8	0.7	1.5	1.2	0.8	14.5	1.56	16.5	WT & plant running, storm clean discharge = 2MM
Reduction Desired	0.1	3.1	-9.6	-7.8	-20.7	-3.7	-2.7	-41:2	0.00		24 days at 1.7MM gals consumed, treated, evaporated and NO rainfall for those days
									,		
			·`			<del></del>					
9/15/2007	<u> </u>										
9/14/2007											
9/13/2007	ļ										
9/12/2007	-							For sink			1100
9/11/2007	0.0	-1.3	-1.2	0.7	-1.0	-0.2	0.3	-2.8			Will transfer water to #1 from #3 for WT
9/10/2007	0.2	-0.4	-2.4	0.4	0.7	0.6	-0.1		0.0	0.0	No rainfall
9/9/2007	-0.3	0,1	0.0	-0.4	. 1.4	0.4	0.2	1.6	0.3	2.9	Rainfall 1", unit down 1/2 day, WT running
9/8/2007	0.2	-0.4	-3.6	-1.4	. 0.0	0.0	,0.5	-4.7	1.0	10.7	High rainfall for 1 day
9/7/2007	-0.1	0.0	-1.2	0.0	-2.9	17.6	-1.5	-4.0	0.8		Transfer #4 Moat to #3 Moat
9/6/2007	0.1	0.0	3.6	-0.7	1.7	-1.2	0.0		0.0	0.3	Shutdown 2nd discharge line
9/5/2007			0.0	-0.7	-1.0	-1.2	0.7	-2.2	S\$.1.1	Soft Charles	High rainfall for 1 day, shut down 1 line discharge
9/4/2007			0.0	0.0	-0.2	-1.2	0.5	-1.0	0.7		2 lines Discharge started
9/3/2007			-1.2	-0.7	-0.5	0.0	-0.3	-2.7	0.6	. 6.6	
9/2/2007			. 2.4	2.1	3.3	1.6	0.7	10.1	0.0	0.3	Volume changed due to rainfall, moat topped over
9/1/2007			0.0	-1.4	1.4	-0.8	1.1	0.3	2.9	30.8	Heavy rainfall for 1 day

# Agrifos Fertilizer Inc. Process Water Balance - Calculated Volume Changes

Date		-	Change in	Volume (	MM gals)			Total	Rainfall	Total	Comments
	#1 North	#1 South	#2 Pond	#5 Pond	#3 Moat	#4 Pond	#4 Moat	vol change	inches	MM gals	
Desired level (inch)	-36.0	-36.0	-24.0	-24.0	-37.0	-12.0	-24.0		0.16	1.7	Yearly rainfall average = 60 inches
Area (acres)	0.5	4.5	44.0	26.0	17.5	15.0	4.2			389.0	Total rainfall water collected acreage = 389
										,	
8/31/2007			0.0	<b>0</b> .0	0.0	0.4	-0.1		0.9	9.9	
8/30/2007			0.0	1.4	0.0	0.8	. 0.1	2.3	0.5	5.1	
8/29/2007			0.0	0.0	0.0	0.0	-0.2	<sup>1</sup>	0.3	3.3	
8/28/2007			. 0.0	<b>0</b> .0	0.0	0.4	-0.1	\$ <b>\$</b> \$\$ 0.3	0.0	0.2	
8/2 <b>7/20</b> 07			0.0	. <b>0.</b> 0	-0.5	-0.8	0.8	0.5	0.2	2.2	
8/26/2007			1.2	0.0	0.0	0.4	-0.5	1.1	0.0	0.0	
8/25/2007			0.0	0.0	0.0	0.4	-0.5	0.0	0.0	0.4	
8/24/2007			1.2	0.0	0.0	0.0	-0.3	0.9	0.0	0.0	
8/23/2007			-1.2	-1.4	1.0	0.0	0.2	ii ii -1.4	0.0	0.0	
8/22/2007		·	0.0	1.4	0.0	-0.8	0.7	1.3	0.1	1.4	
8/21/2007			1.2	1.4	-2.4	-0.4	0.7	0.5	0.0	0.0	
8/20/2007									0.0	0.0	* .
8/19/2007					·		-		0.0	0.0	
8/18/2007									0.2	1.9	
8/1,7/2007	•								0.0	0.3	#3 Moat breached
8/16/2007		·				· · ·		· · · · · · · · · · · · · · · · · · ·	7.8	<b>8</b> 2 <b>.2</b>	Heavy rainfall for 1 day, #3 moat overflowed
8/15/2007					,				0.4	4.6	
Total Rainfall for Month								·			
Aug-07									11.6	123.0	Heavy rainfall for month
Jul-07									12.7	134.5	Heavy rainfall for month
Jun-07									7.5	79.5	
/ May-07							!		- 13.4	141.4	Heavy rainfall for month
Apr-07									4.8	50.6	
Mar-07									7.4	77.8	
Feb-07				4				*, 1 _ 31 M	2.0	21.1	· · · · · · · · · · · · · · · · · · ·
J <b>a</b> n-07				1 - 1					7.4	7.7.8	: ' *

Agrif পি Pিকামিইল Inc
Process Water Balance - Volume Changes & Rainfall Effects

